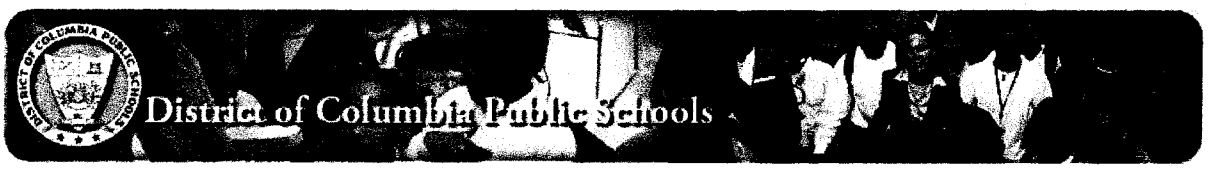

Williams, Adley & Company LLP

ORACLE

CELT

PARADYME MANAGEMENT

EDUSTRUCTURES

PCN STRATEGIES

Buchanan Edwards

Document Managers

Proposal in Response to Solicitation No. DCTO-2008-R-0019 Statewide Longitudinal Education Data Warehouse and Williams Adley, & Company LLP

Technical Proposal

Team

ORACLE

Technical Proposal

Due Date:
January 23, 2008
2pm

Deliver to:
Office of Contracting & Procurement
441 4th St, N.W. Suite 930 South
Washington, D.C. 20001
Attention: Annie R. Watkins, Contracting Officer
Bradley Hill, Contracting Specialist

Points of Contact:
M. Mickey Williams, Director Business Development, Williams Adley & Company LLP
1250 H. St NW Washington, D.C. 20005 Office: (202) 371-1397 Fax: (202) 371-9161
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Gerry K. Anderson, Technology Sales Manager, **Oracle USA**
State and Local Government
11102 Glenn Brooke Court, Glenn Dale, MD
Email: **gerry.anderson@oracle.com**

This proposal includes data that shall not be disclosed outside the District and shall not be duplicated, used or disclosed in whole or in part for any purpose except for use in the procurement process.

If, however, a contract is awarded to this offeror as a result of or in connection with the submission of this data, the District will have the right to duplicate, use, or disclose the data to the extent consistent with the District's needs in the procurement process. This restriction does not limit the District's rights to use, without restriction, information contained in this proposal if it is obtained from another source. The information subject to this restriction includes this document in its entirety.

ORACLE PARTNER

Williams, Adley & Company, LLP
IT Management Consultants
Certified Public Accountants
1250 H. St NW Suite 1150 Washington D.C. 20005
Office 202.371-1397 Fax 202 371-9161

January 23, 2008

Ms. Annie Watkins, Contracting Officer
District of Columbia Government Office of Contracting and Procurement
441 4th St. N.W. Suite 930 South Washington, DC 20001

RE: DCTO-2008-R-0019 State Longitudinal Education Data Warehouse (SLED)

Dear Ms. Watkins:

On behalf of Team Oracle, Williams, Adley & Company LLP, and Oracle USA, along with our subcontractors CELT, Edustructures and our LSDBE partners, Paradyme Management, PC Net, (PCN Strategies), Document Managers, and Buchanan & Edwards are pleased to provide a caliber of talent in response to the RFP noted above.

On the pages that follow we present a proven data warehouse solution to help improve the tracking of student mobility and growth as they matriculate through the District of Columbia's public education system, college, and post-secondary education, and initial years of employment.

[redacted]

[redacted]

Sincerely,

M. Mickey Williams
Director, Business Development
Enclosures

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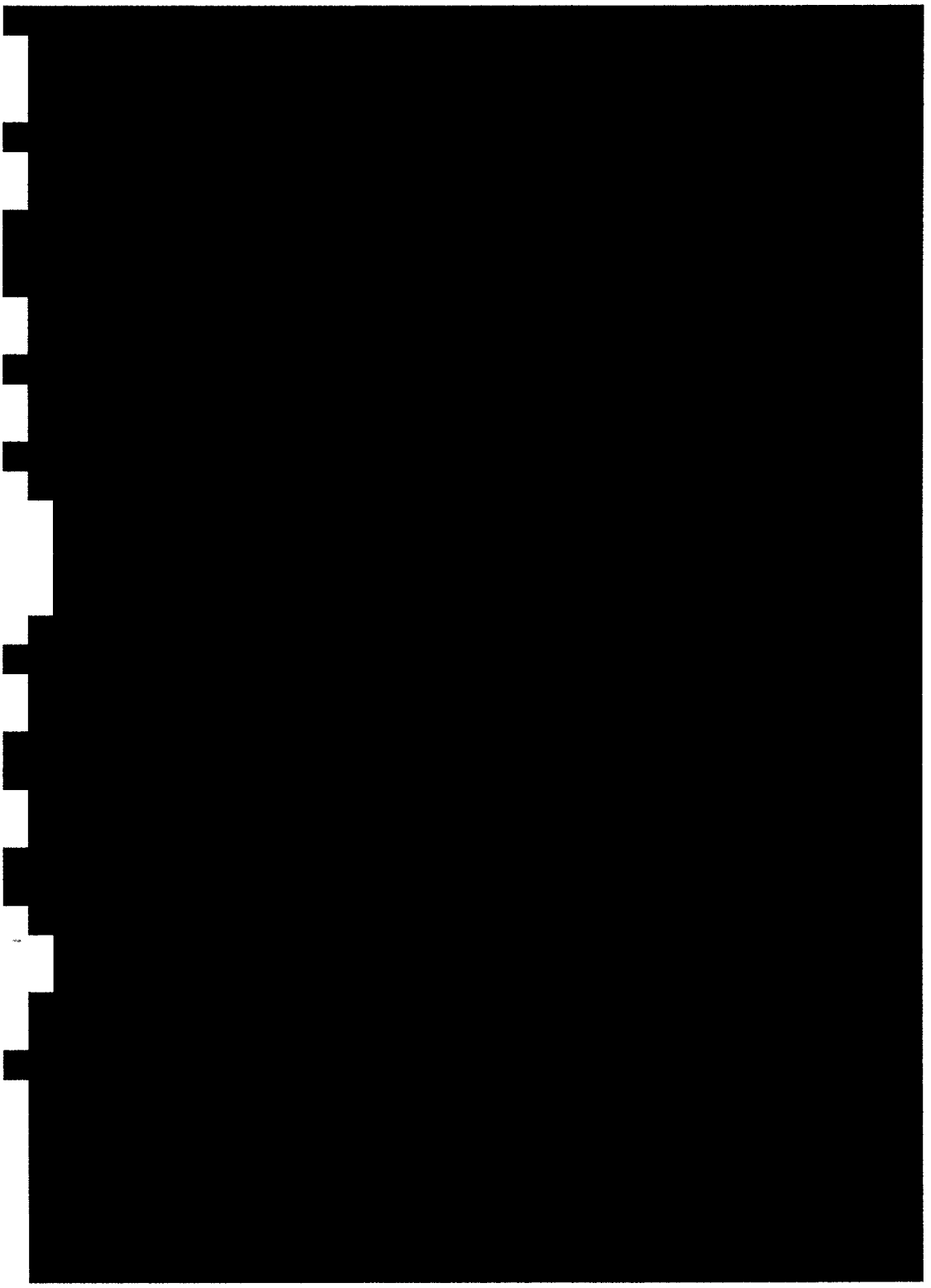

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Introduction

Solution Overview

The Williams Adley and Oracle team ("Team Oracle") is pleased to provide a response to DCTO-2008-R-0019 for the Statewide Longitudinal Education Data Warehouse. We have assembled an all-star team of organizations who have made their mark in education. By combining the talents of educational specialists with technologists and local firms that understand the District's needs, we are well positioned to meet and exceed the requirements of your solicitation.

We have formatted our response with foremost emphasis on the Business Priorities outlined in the RFP. From that point onward, we have tried to strike a balance between providing a complete responses and providing concise responses. In some cases, we have merged several questions of a similar theme together to avoid repetition. At the core of our solution will reside a single Oracle Database Instance that will house and integrate all components of the SLED System. The **State Longitudinal Data Warehouse (SLED)** will be the "flagship" of the SLED System. The longitudinal data warehouse, which will be a data system capable of tracking student information over multiple years in multiple schools, shall serve as the integration point for all of the information in the SLED System. This data warehouse will benefit from our team's experience in building a successful SLED data warehouse at other State Departments of Education.

Upon commencing the project, the first priority will be to put the **Unique Student Identifier** in place so that the various SIS systems will be able to access a central repository to request existing or new Unique Student Identifiers. This will be orchestrated between the Student Information Systems and the SLED using SIF technology. We have included in our team a company that specializes in SIF solutions.

Additionally, data will be sourced from various source systems using Oracle's Extraction, Transformation and Loading (ETL) tool. This is a total solution that includes pre-defined models for the staging and delivery of data. Proven data models for a persistent staging area and dimensional data marts provide the cornerstone for a business intelligence solution that is open, extensible and ready to integrate third party data sources. Oracle's Data Warehousing Fast Track Methodology (described in Appendix 16) will be used to implement this solution.

The **Student Tracking System (STS)** will be one of the components contained in the SLED system and will source data about a student's higher education and employment from various systems such as UDC and other public universities' SIS and National Student Clearinghouse. The STS will contain critical information spanning a student's lifelong public education experience in DC, from early childhood through grades K to 12, college and other post-secondary education, and into adult education and initial years of employment.

The **Teacher Tracking System (TTS)** will be another component contained in the SLED system and will integrate teacher associated data. This system shall also manage unique identifiers for teachers as they move through the education system in the District of Columbia.

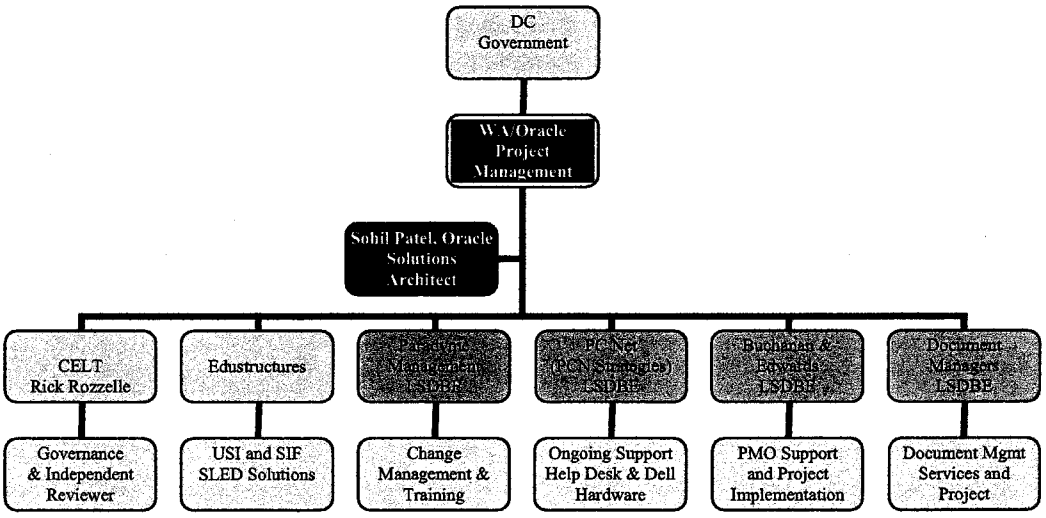
The SLED system will also contain the **Direct Free Meal Certification Engine.** This will include the schema, data structures and program code to implement the Direct Free Meal Certification Engine. Data from the District of Columbia Department of Human Services Income Maintenance Administration (IMA) will be loaded periodically into the Data Warehouse. This data will be at the individual level. Match Merge routines will be used to connect this data to the existing student population data. The Direct Free Meal Certification Engine will then apply the rules to determine which of the students are eligible. This application will also allow reporting in a secure and controlled manner.

We are proposing a Maximum Availability Architecture (MAA) as the solution for the Production Environment to meet the requirements of 24x7x52 availability specified in the RFP.

Because no technology solution is of any value unless it is used, we plan to utilize a structured change management program to maximize adoption of the system.

In summary, the proposed SLED System will be able to provide enhanced analysis of student mobility and growth over their entire lifespan in DC public education institutions, and to provide the data required for planning, trend analysis, performance projections, program evaluation, and stakeholder empowerment. An easy to use reporting infrastructure will be made available to all stakeholders to get to this data easily and intuitively.

A) Team Structure



Our response team will categorize responsibilities and governance duties into the following major categories:

- **Project Management and Executive Oversight**
- **Delivery**
- **Independent Reviewer**
- **Change Management and Training**
- **Ongoing Support**
- **Document Management - Optional**

Project Management and Executive Oversight -- Williams, Adley & Company, LLP (WA&Co) will serve as the prime contractor for this engagement and will be subcontracting to the other member of "Team Oracle". [redacted] In the executive oversight role, WA&Co will be responsible for prioritizing and tracking issues raised by the other team members. WA&Co will also be responsible for working with the District to ensure that the District's functional and technical staff is achieving adequate participation in the project. WA&Co will be responsible for ensuring that all the team members work together effectively. Finally, although Oracle's project manager will interface with the District on project topics, WA&Co will interface with District executives. Topics discussed at that level would include project progress. In addition to those individuals, [redacted] will assist WA&Co with overall project management as needed.

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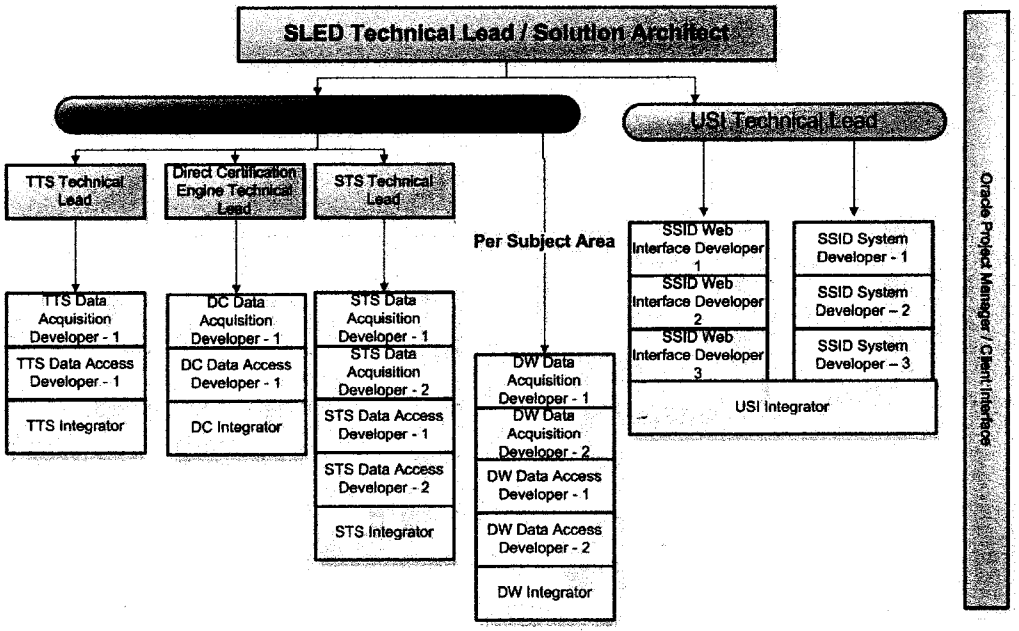
[redacted]

Oracle Team Structure



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[redacted]

Ongoing Support – [redacted] Additionally ongoing support will include online help functions including ability for authorized users to initiate online support requests via password protected access to such functionality, access for all authorized users to online help documentation, tip sheets, procedure documentation, and frequently asked questions relevant to the product as implemented by OSSE. [redacted]

Document Management (Optional) – As part of Team Oracle, **Document Managers. (DigiDoc) our LSDBE Partner** will provide an optional Content Management solution. As part of this effort we would like to offer a Content Management Solution that we feel will be required. [redacted] Our insight into

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to this area as well as our Filenet certification status provides defined scalable solution for this area.

B) Team Backgrounds

About Williams, Adley & Company, LLP (http://www.wacllp.com/)

Founded in 1982, Williams, Adley & Company, LLP (WA&Co) is one of the nation's leading certified public accounting and management consulting firms providing financial management, assurance, accounting, advisory and auditing services. Our staff of 110 includes a cadre of experienced personnel comprised of information technology professionals, accountants, and auditors.

As an current LSDBE firm in the District of Columbia for the past 25 years, we have been serving the District of Columbia Government in both advisory and assurance roles that primarily focus on financial management, data validation, business processing, grants management, Medicaid, and compliance with federal legislation like the No Child Left Behind Act, HIPPA, and A-133 federal reporting requirements for grantee recipients.

Over the years, we have provided advisory services to a number of DC Public Charter Schools related to A-133 Single Audit requirements for federally funding entities. Additionally, our K-12 services provided to District of Columbia educational entities include serving as assurance advisors to a number of DC Public Charter Schools (12). More recently, Williams, Adley & Company, LLP (WA&Co) has assisted the District of Columbia Public Schools Office of the Chief Financial Office with advisory support services related to the agency's efforts to close its FY07 financial records and related balances. [redacted] Our efforts are required to ensure that these year end closing packages will meet the requirements set forth by the DCPS independent auditors, including other third party requestors.

Because of our involvement over the years with these educational entities, we are well versed in the issues and challenges that presently exist related to data integrity and the impact these issues have on current and future federal reporting requirements of the District of Columbia Government including the forthcoming DC Office of the State Superintendent of Education SLEDS data warehouse project.

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Williams, Adley Key Contacts

Name:

About Oracle (http://www.oracle.com)

Oracle Corporation is the world's leading supplier of software for information management and the world's second-largest independent software company. Oracle develops, manufactures, markets, distributes, and supports computer software that helps governments, corporations, and organizations of all sizes manage and grow their businesses. Oracle has approximately 65,000 employees worldwide, dedicated to providing a complete business solution that includes integrated, award-winning support services combined with industry-leading products and world-class partners.

Oracle has worked with many customers in the K-12 arena, some of which are listed here:

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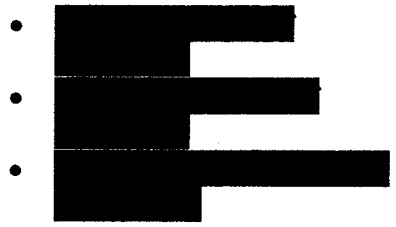
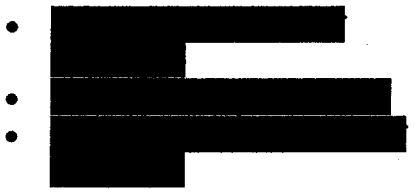
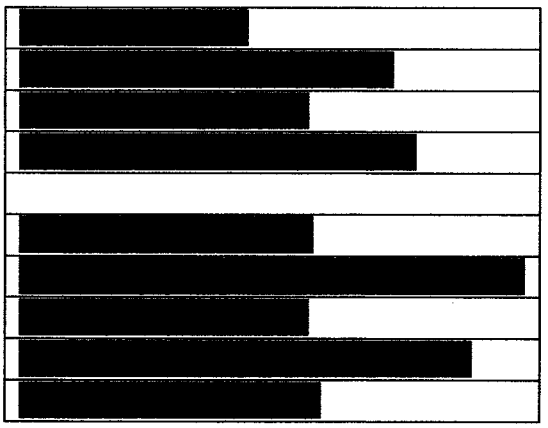
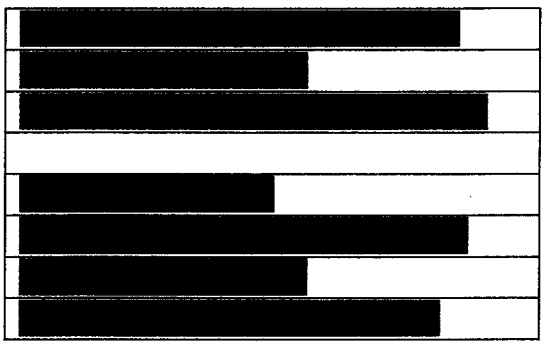




Oracle Corporation is currently working with the Tennessee Department of Education (which was the recipient of an LDS grant) to streamline Student Data Collection, Regulatory Compliance and Planning Processes.

Oracle Key Contacts





About Edustructures (http://www.edustructures.com)

Founded in 2002 by veterans of the educational software industry, [redacted] and [redacted] Edustructures entered the market with a SIF-specific focus that has quickly taken the company to a leadership position for SIF-based solutions. Noting the emergence of XML-based Web Services technologies in the pK-12 market concurrent to the rising call for educational data standards, [redacted] and [redacted] anticipated and responded to the need for commercial-grade tools that integrate disparate education applications. Edustructures has developed scalable, robust and cost-effective solutions and services that deliver secure data exchange for more states and districts than any other SIF solutions provider.

Going forward, Edustructures' vision is to create a brighter future for all children by enabling schools to be more efficient. This vision will be achieved by connecting the systems that power education via the highest quality SIF-based products, services and experiences.

Edustructures was the first company to successfully deliver a commercial Zone Integration Server (ZIS), the heart of every SIF implementation. This technology "first"

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immediately catapulted Edustructures to the market leadership position (in revenues and numbers of students served), a position the Company has maintained—through continual innovation—for five years. The Edustructures SIFWorks® Integration Platform software is installed in thousands of schools worldwide and is built to support all versions of the SIF specification. The software streamlines the administration of K–12 schools by allowing various applications to share data automatically and securely. The SIFWorks® Integration Platform represents the state-of-the-art in application integration technology for pK-12 education. With SIFWorks, SIF-compliant applications can communicate to share information securely, reliably, and in real-time. Edustructures' comprehensive suite of SIF-based solutions addresses all forms of horizontal SIF integration (district-based SIF interoperability), SIF-based unique student ID management for states, vertical reporting and longitudinal data collection, and SIF agent development. And SIFWorks allows schools to effectively manage the integration, identification and reporting needs unique to districts and states.

Edustructures Key Contacts

Name: [redacted]
Role: National Director State Sales
Phone: (801) 858-0068
E-mail: [redacted]
Name: [redacted]
Role: PM and Technology Architect
Phone: (801) 858-0076
E-mail: [redacted]

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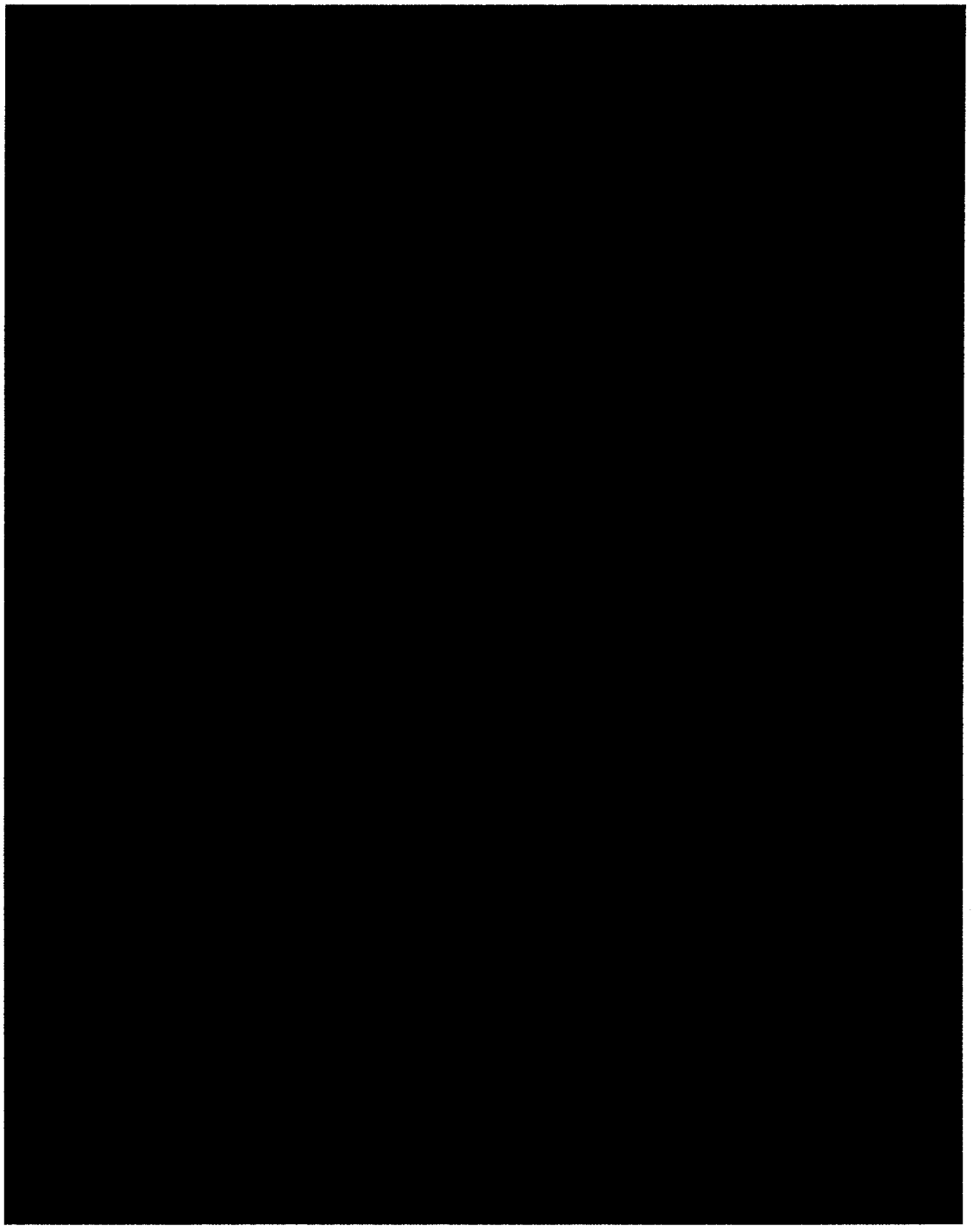

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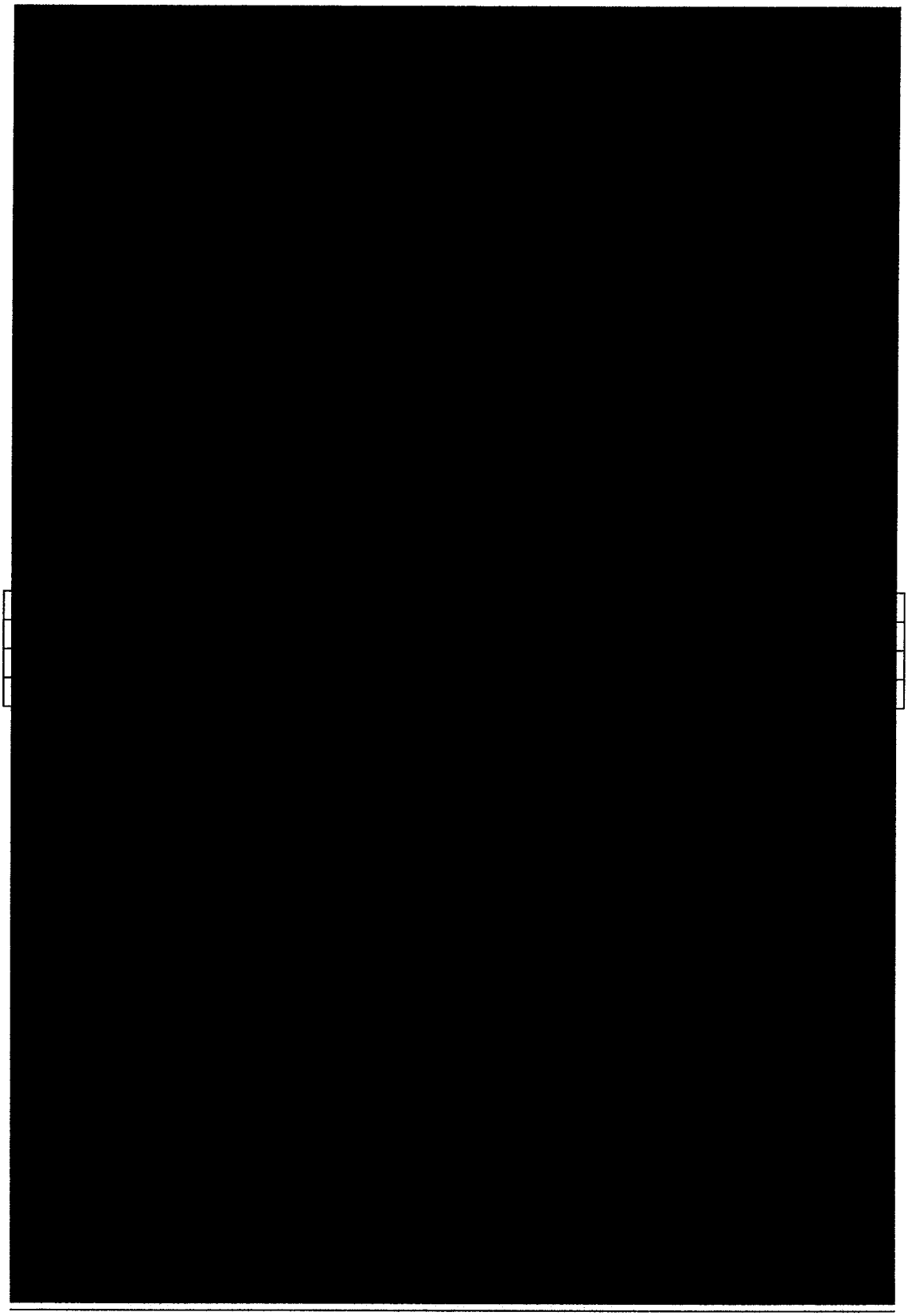

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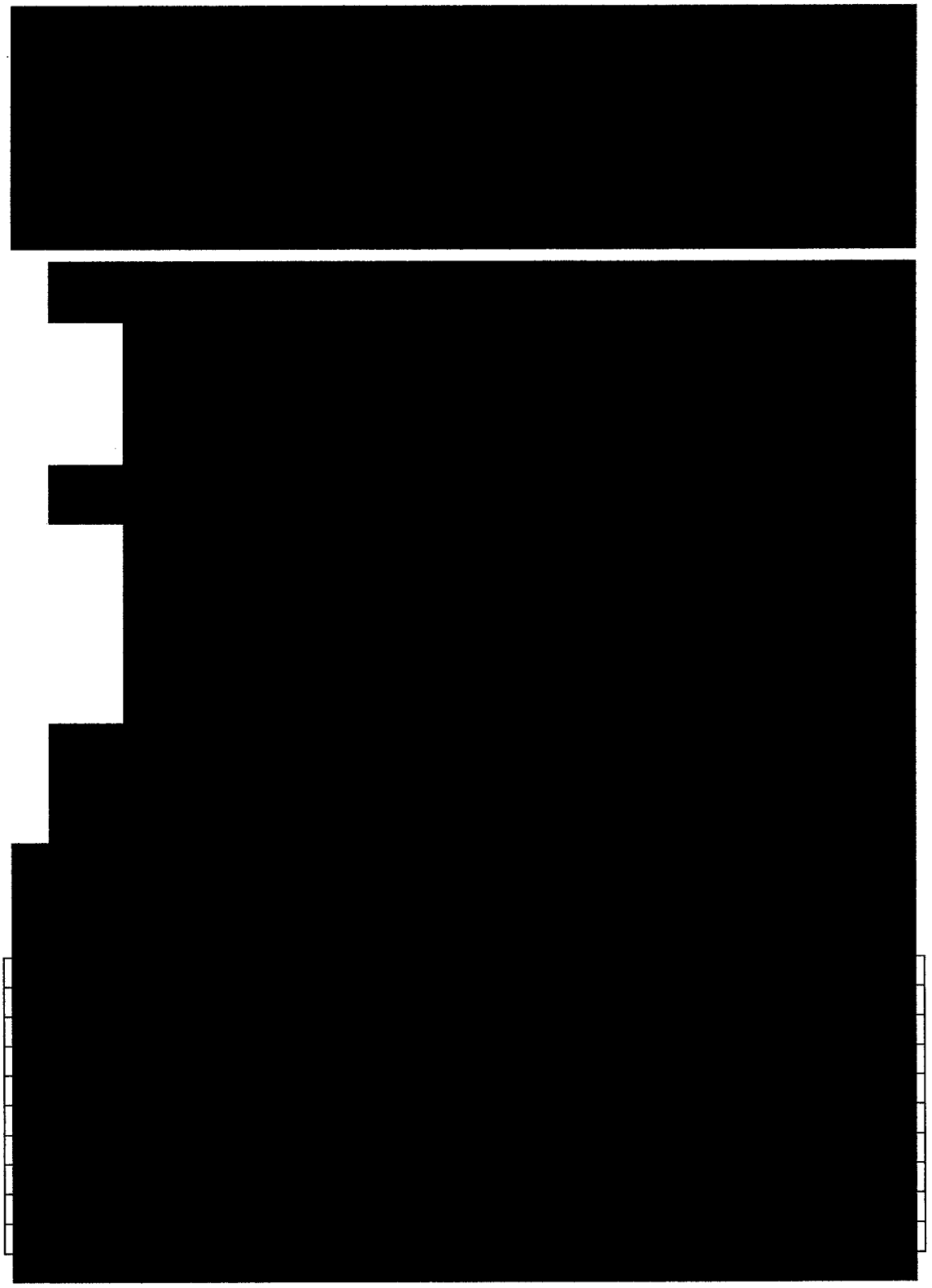

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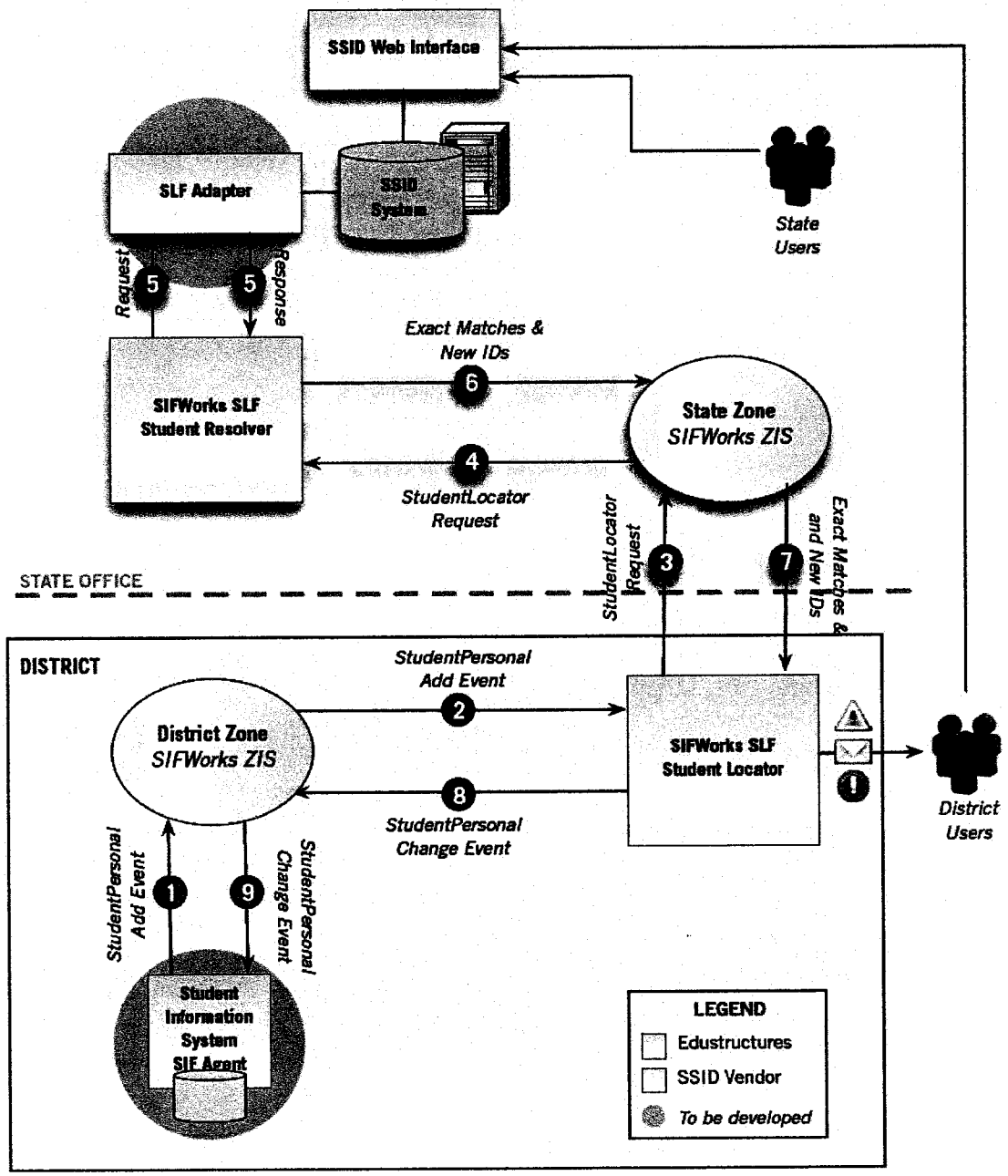
Business Priority #1. Unique Student Identifier (USI) System

Narrative Response



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Unique Student Identifier Solution– This will include the schema, data structures, SIF components and program code to implement the Unique Student Identifier. This application will accept incoming requests (which will include demographic data needed to identify a student such as SSN, Data of Birth, Name, Gender, Ethnicity etc.) from the various Student Information Systems. Based on match-merge rules, the SSID System will then either return an existing USI to the requesting system or create the student as a new student and return a new USI to the requesting system. This could be extended to include other non-SIS systems (**this is not in scope for the specific RFP response**).

Our solution will include the SIFWorks® Student Locator Framework (SLF). The SIFWorks® Student Locator Framework was developed in response to a growing demand for highly automated state-level student ID management (delivering the ability to assign unique student IDs that follow each student and their educational history through school and district changes) and is the company's key solution for State Education Agency's (SEA's). SLF is a framework comprised of two SIF Agents and an adapter for integration into existing student ID systems. Collectively, these components are used to deliver near real-time, secure and scalable statewide ID management solutions that interoperate with existing SIF-enabled student information systems.

Components of the USI Solution: The diagram above shows the components of the USI solution. The table below provides additional information:

#	Component	Function
1	SSID System	[redacted]
2	SSID Web Interface	
3	SIF Adapter for the SSID System	
4	Available SIF Agents	
5	Not Available SIF Agents	
6	Manual Systems SIF Agents	

The SLF framework handles transporting data over the SIF infrastructure, interacting with SIS systems, and implementing the Student Locator message choreography

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introduced in SIF 1.5. By developing a SLF Adapter module, any student ID management system can utilize the potential of SIF Student Locator Framework.

SLF is a COTS solution with a public API for developing system adapters. Integrating existing state SLF systems is largely a matter of requirements analysis, design work, unit system testing and the development of the state-specific SLF Adapter. Edustructures has already completed this for other state ID management applications implemented in VA, WY, OH and SC.

The SIFWorks® Student Locator Framework® (SLF) is built on Java and is deployable on Windows, Macintosh or Linux systems at OSSE, LEA or school sites. The SIFWorks® Enterprise ZIS will be deployed at OSSE's data center along with the Student Resolver and SLF Adapter components of the system. The Student Locator component will be deployed at each of the LEA or school sites. Each LEA or school site will have a SIF Agent or the Universal Provider.

As an example, when a student is added in the student information system, SLF automatically obtains a unique ID for that student from the Unique Student Identifier (USI) application and updates the student's record in all applications. SLF features a modular architecture in which SLF Adapters are developed in partnership with vendors of ID management solutions.

For the purpose of this RFP response and cost estimates, the pricing for the Zone Integration Server (ZIS) is contractually restricted to the Unique Student Identifier Solution and as such is not dependent on the number of students. When LEA's subsequently desire to use the ZIS to horizontally integrate other applications such as their Library system or cafeteria systems into the ZIS they will need to pay an upgrade charge, but **this is outside the scope of the RFP**.

This ZIS is restricted to moving the Unique Student Identifier (USI) from the USI database through the SIF Student Locator Framework and back into the Student Information System. When LEA's decide to integrate local applications into their Zone Integration Server (ZIS) for purposes of sharing data, they will be required to pay a per student up charge cost to change the ZIS status from restricted to un-restricted use.

Implementation Timelines – The expectation in the RFP is that the Unique Student Identifier (USI) be implemented within 60 days of project start date. Because of the nature of the distribution of the SIS systems in the charter and non-charter schools, we are proposing a phased implementation timeline. Phase USI-A (which will be the first release of the USI solution) will be available within 60 days of the project start date. The following table shows the timeline for the other phases of the USI solution:

USI Phase	Implemented by	Description	SIS Systems

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* Our cost estimates assume that there will be more Phases USI-A and Phase USI-B districts than any other phase. This is the reason why the implementation plan is front-loaded in 2008. This assumption is based on a best guess from the information provided in the RFP and as such could be revised. Upon more detailed analysis, we may find that these numbers are more back-end loaded. Also, if many of the LEA's have hosted SIS's then the number will actually go down. The implementation price includes an SLF "gap-analysis" where both of these facts will be determined.

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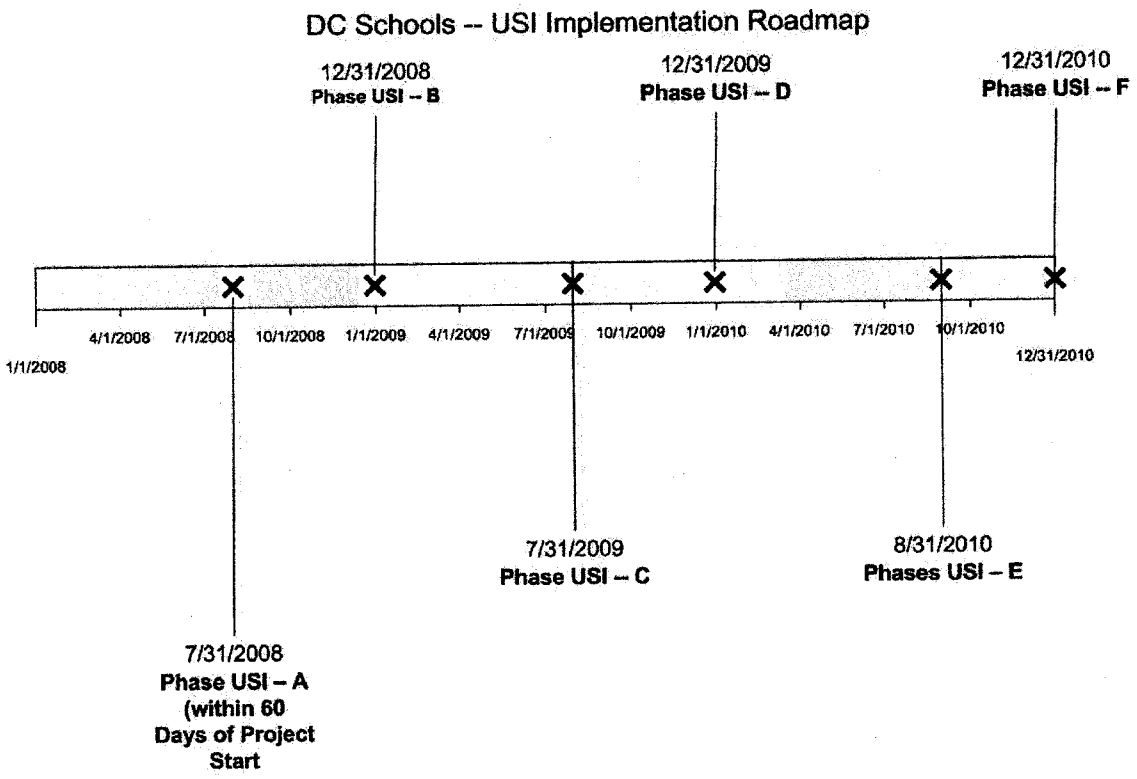

Our solution recognizes that the client has a number of SIS's being used and provides for interfacing with them. At a high level, we can classify the existing SIS's into the following four categories:

- **Category 1** -- Includes those SIS systems that have identified bi-directional SIF agents (Power School, SASI, Pentamation, etc.)
- **Category 2** -- Includes SIS systems without bi-directional SIF agents (Blackbaud, SchoolMaster, Rediker, etc.).
- **Category 3** – Includes SIS systems that do not currently have SIF agents.
- **Category 4** -- Includes those SIS systems that are manual or batched processes (Access, MS Excel and MS Word).

Our solution will include the interfacing with all the above categories of SIS's through one of the following four means:

1. We will employ the SIF agents that are already bi-directional.
2. We will work with the vendors of those applications that have uni-directional agents and encourage/assist them in making their agents bi-directional as we have done for several other states.

3. We will work with the vendors of those applications that currently do not have SIF agents. --To assist them we will provide them (at no cost) the Edustructures Agent Development Kit (ADK). (Please see Appendix 15 for information about the SIFWorks Agent Development Kit)
4. We will use the File Import Module of the Student Locator Framework (SLF) to integrate the remaining SIS's that use exclusively batch or manual processes. Details of the File Import Module of the Student Locator Framework are provided below. Please see Appendix 15 for information about the File Import Module of the Student Locator Framework

Please see Appendix 13 for information about an optional SIF Framework Solution.

Tabular Response

USI Req. #	Requirement	Proposed Solution
USI -1	Establish an automated process to assign and maintain a Unique Student Identifier (USI). An accurate USI system will correctly identify each learner and match student level data from multiple systems as LEAs enroll, transfer, and exit students.	[redacted]

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		[redacted]
USI-2	Provide a unique student identifier that is managed by the SLED System to do the following: assign Unique ID's to only one student (non-duplicated) follow the Student throughout the school years and do not change -Unidentifiable (not the social security number, no demographic data, not incremental)	
USI-3	Provide a system that allows for individual and mass assignment of USIs through batch processing.	

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USI-4	Assign USIs by a single process established and maintained by OSSE.	[redacted]
USI-5	Assign a unique state-wide student ID based on a school submitting a specific set of student demographic information.	
USI-6	Provide a system that supports issue tracking and resolution.	
USI-7	Provide identifiers for pre-slugging on the DC CAS Assessment.	
USI-8	Provide a system with capability to accommodate the ability to assign and follow unique student identifiers for children beginning from birth. (Offerors shall include examples of the workflow and processes required.)	

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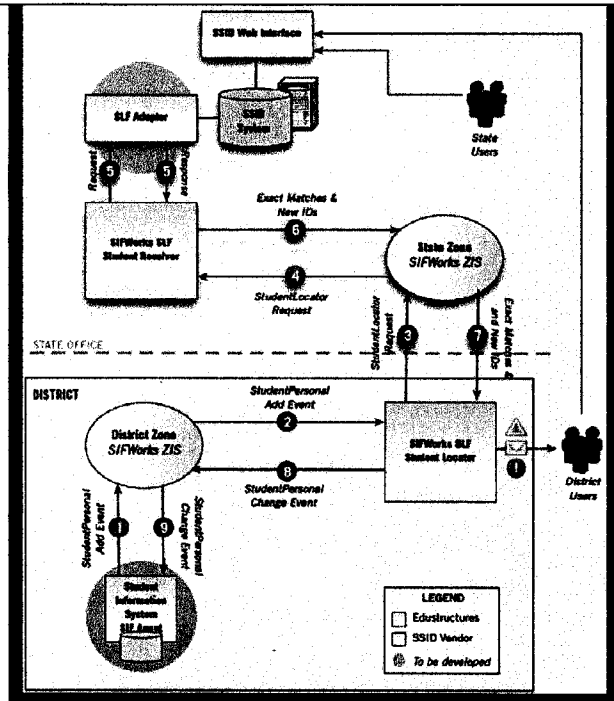
SSID Web Interface
SLF Adapter
State Users
Request
Response
Exact Matches & New IDs
SIFWorks SLF Student Receiver
State Zone SIFWorks ZIS
StudentLocator Request
STATE OFFICE
StudentLocator Request
Exact Matches and New IDs
DISTRICT
StudentPersonal Add Event
District Zone SIFWorks ZIS
SIFWorks SLF Student Locator
District Users
StudentPersonal Change Event
StudentPersonal Add Event
StudentPersonal Change Event
Student Information System SIF Agent
LEGEND
Edustructures
SSID Vendor
To be developed

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		[redacted]
USI-9	Design a system to provide advanced record matching capabilities ensuring highly accurate matches that are sensitive to data anomalies (twin students, common data entry errors	

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	across multiple fields and field types)	[redacted]
USI-10	Provide record matching capabilities that are "tunable" without requiring modifications to application level code. Ideally, it shall also allow for integration with "best of breed" data analysis tools such as Trillium Software	
USI-11	Provide a system that supports both automated and manual matching processes based on match level criteria that is configurable. High confidence matches would be automatically processed. Suspect matches would be flagged for review	
USI-12	Provide a system to support a workflow process that allows for manual review of records that require additional validation prior to ID assignment. This shall support issue tracking and resolution. The tracking and workflow interface shall be web-based.	

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		[redacted]
USI-13	Provide a system with the ability to easily create error checking reports that identify all students and their respective ID, duplicates and non standard USI numbers.	
USI-14	Provide all the necessary maintenance and support procedures in documentation for supporting, hosting and maintaining solution.	
USI-15	Provide a tracking and workflow interface that is web-based via a dashboard.	

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		[redacted]
USI-16	Provide a USI solution that has the ability to interface with various SIS's and function without depending on a specific SIS.	

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		[redacted]
USI-17	Provide a system with the ability to accommodate standard middleware connections to Microsoft office productivity applications such as Excel and Access.	
USI-18	Provide Training to OSSE and OCTO staff.	
USI-19	Provide a solution that integrates a USI (or set of USIs) to various SIS's and other distributed data systems throughout the enterprise (assessment system, state special education system). This will allow the same student record that is in one system to be logically "linked" with attributes for these students which have been collected from other source systems into a single data warehouse.	
USI-20	Provide a system that allows for real	

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	time integration through an open interface (web service architecture).	[redacted]
USI-21	Provide an SIF compliant system.	
USI-22	Provide a database independent system.	
USI-23	Provide a system that allows for web service integration.	
USI-24	Provide a solution that is "open architecture" that allows for easy integration with all core functionality.	

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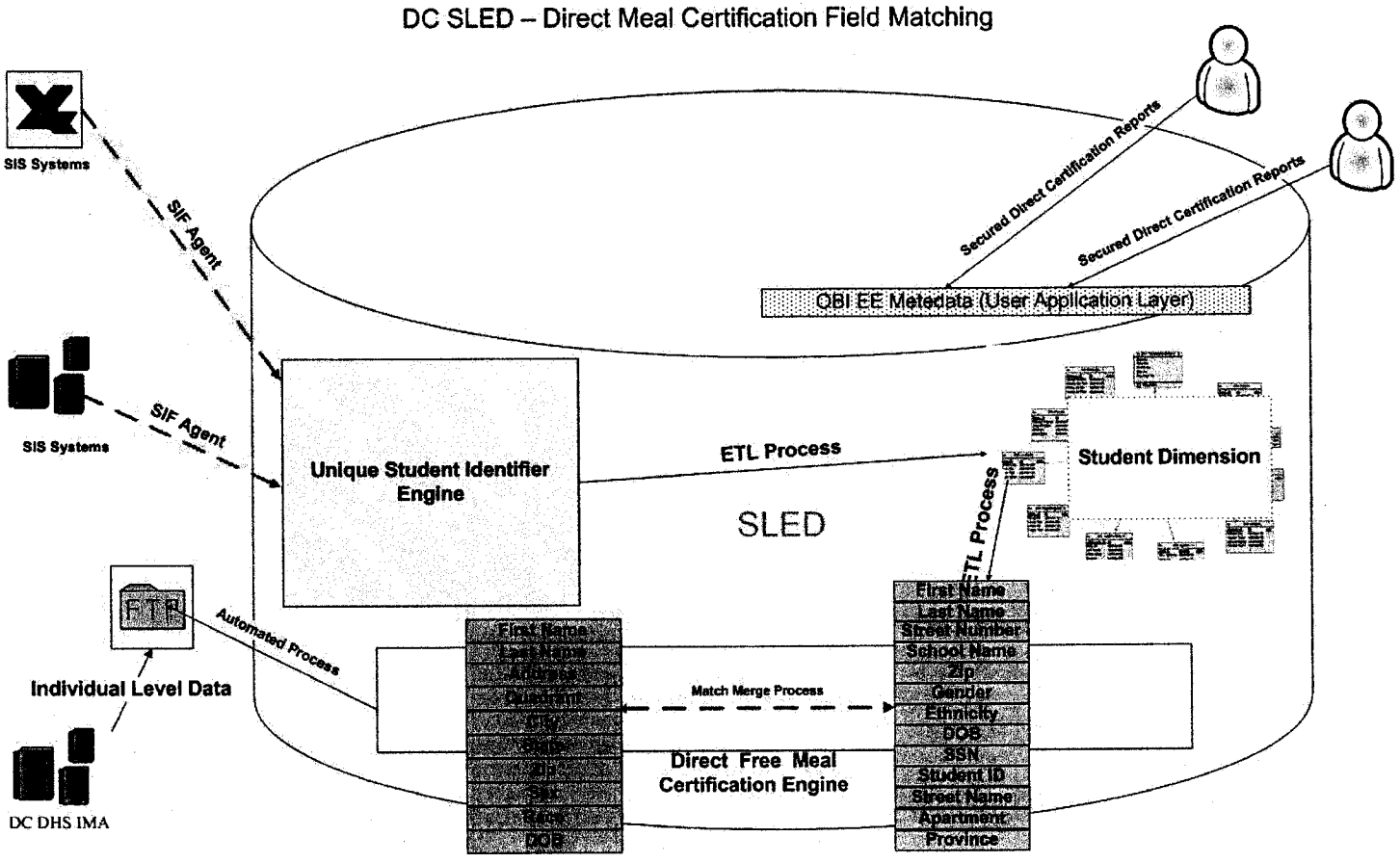
Business Priority #2. Direct Certification for the USDA Free and Reduced Meal Program



Narrative Response

Direct Free Meal Certification Engine – This will include the schema, data structures and program code to implement the Direct Free Meal Certification Engine. Data from the District of Columbia Department of Human Services Income Maintenance Administration (IMA) will be loaded periodically into the Data Warehouse. This data will be at the individual level. Match Merge routines will be used to connect this data to the existing student population data. The Direct Free Meal Certification Engine will then apply the rules to determine which of the students are eligible. This application will also allow reporting in a secure and controlled manner.

The Child Nutrition and WIC Reauthorization Act of 2004 (Public Law 108-265) amended the Richard B. Russell National School Lunch Act to require Direct Certification. Each local educational agency (LEA) must directly certify children who are members of households receiving assistance under the Food Stamp Program as eligible for free school meals, without further application, based on information provided in an electronic data file from the Department of Human Services (DHS).

The proposed solution will create state-level data matches between children participating who are members of households receiving assistance under the Food Stamp Program (FSP) and Temporary Assistance for Needy Families (TANF) and enrolled students whose demographic information resides in the proposed Data Warehouse. The results of the data match will be made available to local districts that will provide a system download feature to interested local agencies. The downloaded information will allow districts to retrieve a list of their currently enrolled students who qualify for free meals through Direct Certification.

The Direct Free Meal Certification Engine will implement the following five best practices:

1. Measure Effectiveness: Regularly evaluate the portion of children eligible for direct certification who are actually being directly certified (USDA study provides one possible baseline)

2. Data Matching: Families are notified of their enrollment for free school meals and don't need to return paperwork to the school

3. State Coordination: Data matches are conducted at the state level with easy access to results by local school districts

4. Frequency:
FS/TANF and student lists are updated frequently to ensure accuracy and completeness

Data matches are conducted at least monthly

School districts regularly check for newly eligible students

5. Unmatched Children: Directly certify unmatched children by identifying all children in the FS/TANF household based on the match of a single child or by "looking up" unmatched children

Students determined to be directly certified for free school meals will be matched utilizing a sophisticated matching process as part of the Direct Free Meal Certification Engine. The first step of the process matches the individual level data from the District of Columbia Department of Human Services Income Maintenance Administration (IMA) data to the School and Student dimensions of the Data Warehouse. This looks for matches against all students regardless of their current enrollment. The first pass looks for exact matches based on first name, last name, date of birth, and gender. Any students in the DHS file not matched in the first pass then proceed to a second step that applies a weighted match. The next part of the matching process takes all students matched between the Student dimension and DHS file and attempts to match based on the enrollment data. This essentially places a student in a district's report based on his/her most recently reported district of enrollment.

Benefits of the Direct Free Meal Certification Engine

- Students' Social Security numbers will no longer be provided, improving program integrity and data security.
- Schools will not be able to view any students within their ZIP code areas that are not enrolled in their districts, further increasing data security and confidentiality.
- Schools will be able to view all students reported as enrolled in their districts and will not be limited by the current set of ZIP codes, which could exclude some students from being directly certified.
- Eligibility determinations and access to free meals for eligible students will be improved; verification efforts will be decreased.
- Local districts will no longer need to perform matching of their enrollment data.
- The Direct Certification Report will be available through a secure Web-based application which will allow LEAs the ability to participate in the Direct Certification process.

Implementation Timelines

The expectation in the RFP is that the DIRECT-CERTIFICATION FOR THE USDA FREE AND REDUCED MEAL PROGRAM be implemented by September 2008.

Tabular Response

DC Req. #	Requirement	Proposed Solution
DC-1	Provide a system that allows for the automatic collection of individual level data from the District of Columbia Department of Human Services Income Maintenance Administration (IMA).	[redacted]
DC-2	Provide a system that matches the IMA provided data for students who are from households receiving FSP and TANF data to determine if the IMA data certifies those students as "categorically eligible" for free school meals based on their FSP/TANF eligibility. These matches shall be flagged as students that are categorically eligible to receive free school meals.	
DC-3	Provide a system with School level reporting shall provide each school with the ability to run reports that identify	

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	those students who are categorically eligible at their particular school. These school level reports shall only contain the list of students at the particular school that is running the report.	[redacted]
DC-4	Provide a system that provides schools with to have their own direct meal certification role in the SLED System.	
DC-7	Provide a system which reports percentages of students who are categorically eligible.	
DC-8	Provide a system for State reports, created to identify all students that are categorically eligible and which schools they attend.	

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Business Priority #3. Student Tracking System (STS)

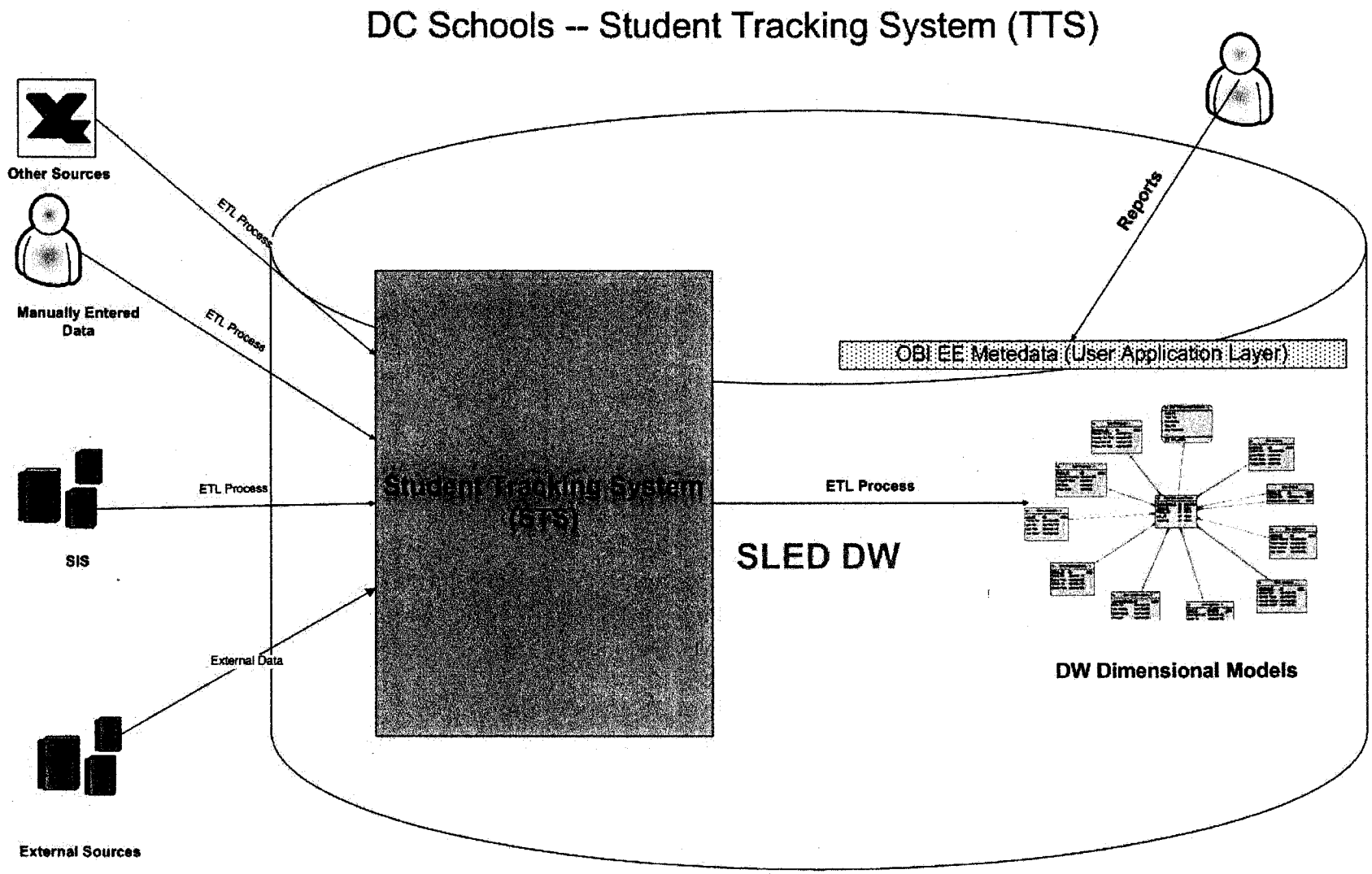
Narrative Response

The DC Schools STS will be integrated into the SLED system. This will consist of persistent data storage schemas for student information (STS), the ETL code to extract, transform and load data from various source systems, the dimensional models required for reporting around students (SLED DW) and the reports that provide this information. Thus the Student Tracking System (STS) will integrate data extracts from Student Information Systems (SIS) to allow for determination of student attendance, enrollment and demographics.

State Longitudinal Data Warehouse (SLED) will be the "flagship" of the SLED System. The longitudinal data warehouse shall serve as the integration point for all of the information in the SLED System including STS. Thus SLED will be the overarching (ETL and Reporting) technology for building the various subject areas. STS will provide the staging area that will feed a subset of the subject areas contained in the SLED that will contain student level detailed data. The STS is generally the business requirements for enrollment and student level data that will he found mostly in student information systems.

The STS will also consider the School reorganization announced on November 28, which introduced an aggressive academic plan calling for the implementation of innovative programs and enhanced staffing models in the District of Columbia Public Schools (DCPS). This proposed action strategy would impact students and families throughout the District by creating new neighborhood schools and improved feeder patterns. The introduction of new programs will align with DCPS's efforts to right size the school system ensuring that all resources are focused on supporting academic programs while eliminating excess space.

The high level solution is shown on the following page:


DC Schools -- Student Tracking System (TTS)
Other Sources
Manually Entered Data
SIS
External Sources
ETL Process
ETL Process
ETL Process
External Data
Student Tracking System (STS)
Reports
OBI EE Metedata (User Application Layer)
ETL Process
SLED DW
DW Dimensional Models

Our solution will [redacted]

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Tabular Response

STS Req.#	Requirement	Proposed Solution
STS -1	Provide a system to track students across various different LEAs.	[redacted]
STS-2	Provide a system that allows for the seamless sharing of a student's basic enrollment and academic information so that teachers can view a students history of enrollment and academic data upon entry into a new school (either new or transfer)	

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		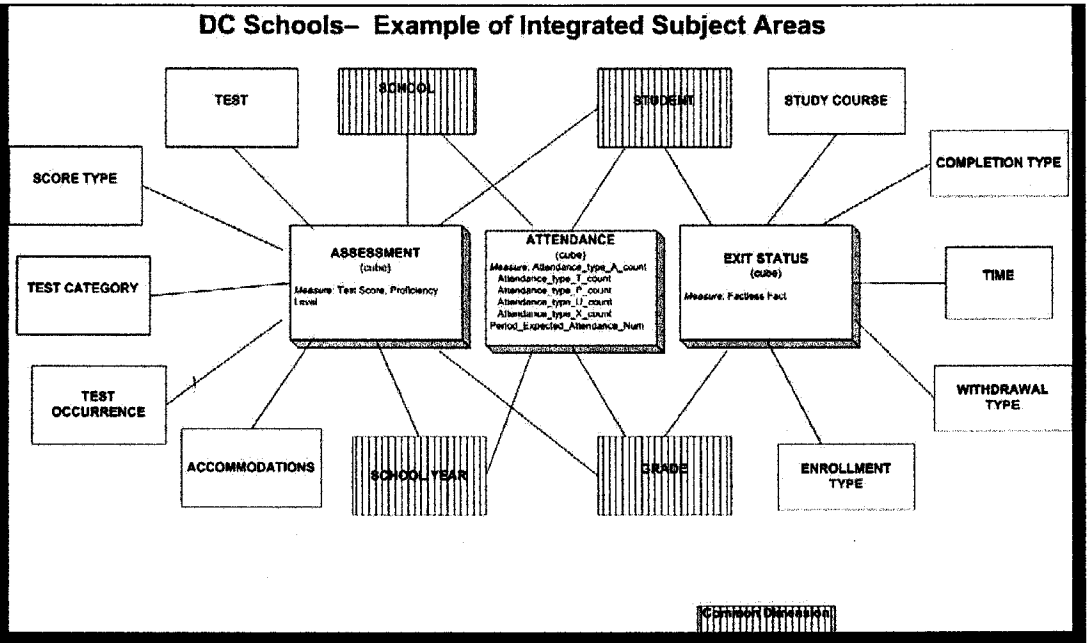
STS-3	Provide a system to provide data on student exit confirmation from their most recent LEA.	

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		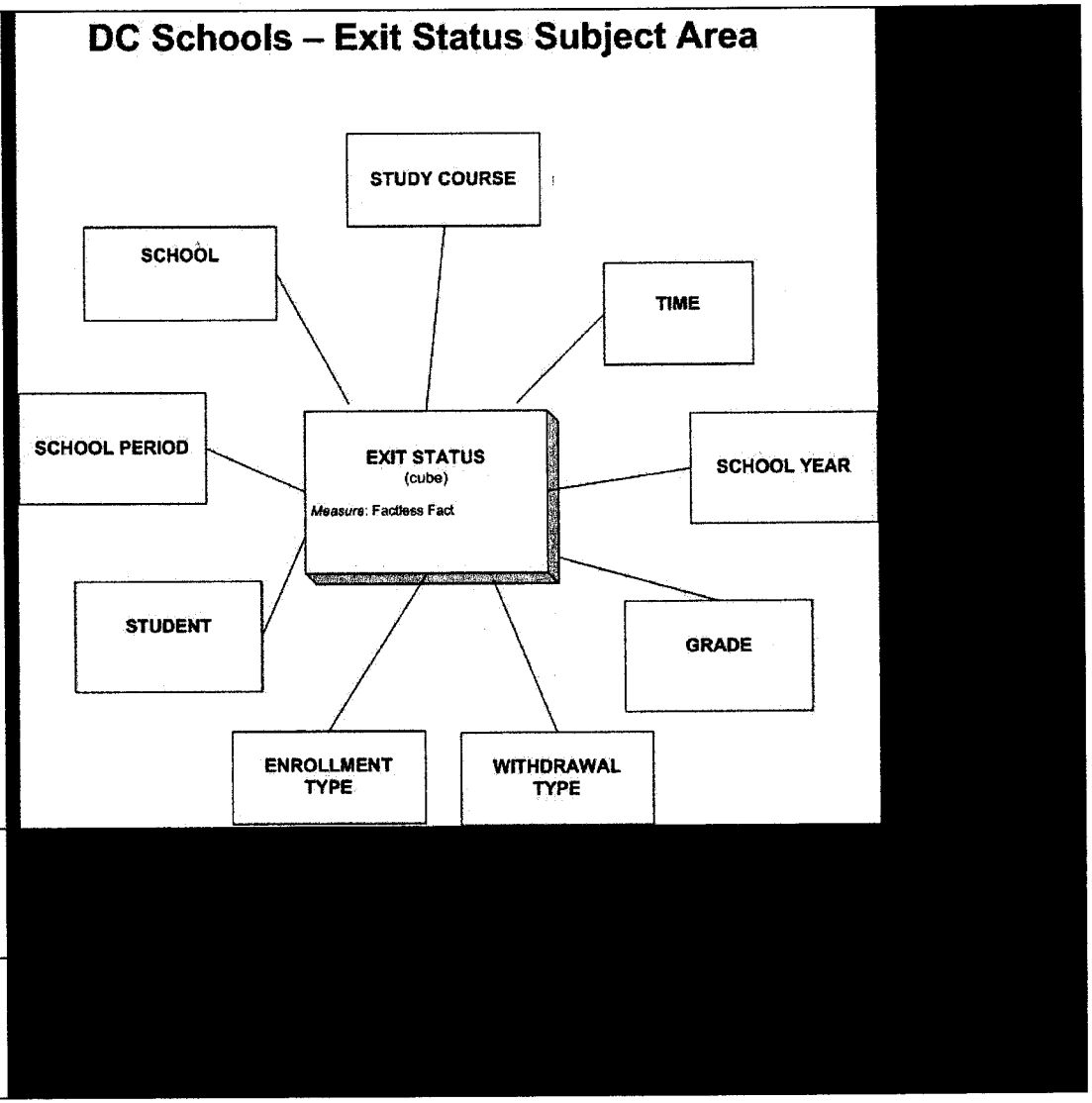
STS-4	Provide a system to Track ethnicity, gender, date of birth, place of birth, home address, Title I (FARM) eligibility	
STS-5	Provide a system that captures all enrollment transactions: date, type (enroll, transfer or de-enroll) and school	

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		[redacted]
STS-6	Provide a system that captures date of promotion for each grade (K-12 only...ability to derive graduation rates, age entering 9th grade, grades repeated)	
STS-7	Provide a system to Maintain student	

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	record for schools attended for longitudinal analysis	[redacted]
STS-8	Provide a system that automates the calculation of student graduation	

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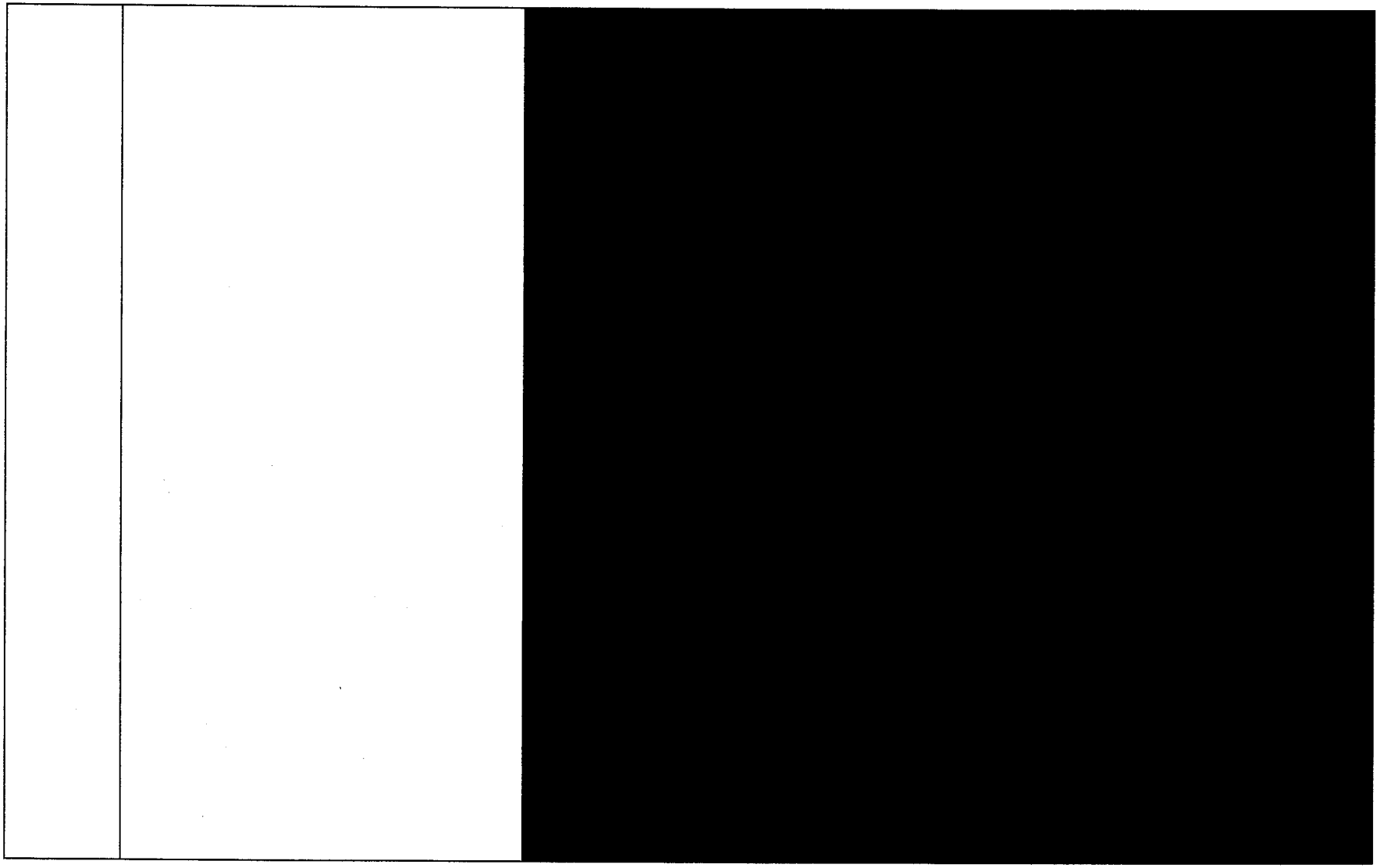

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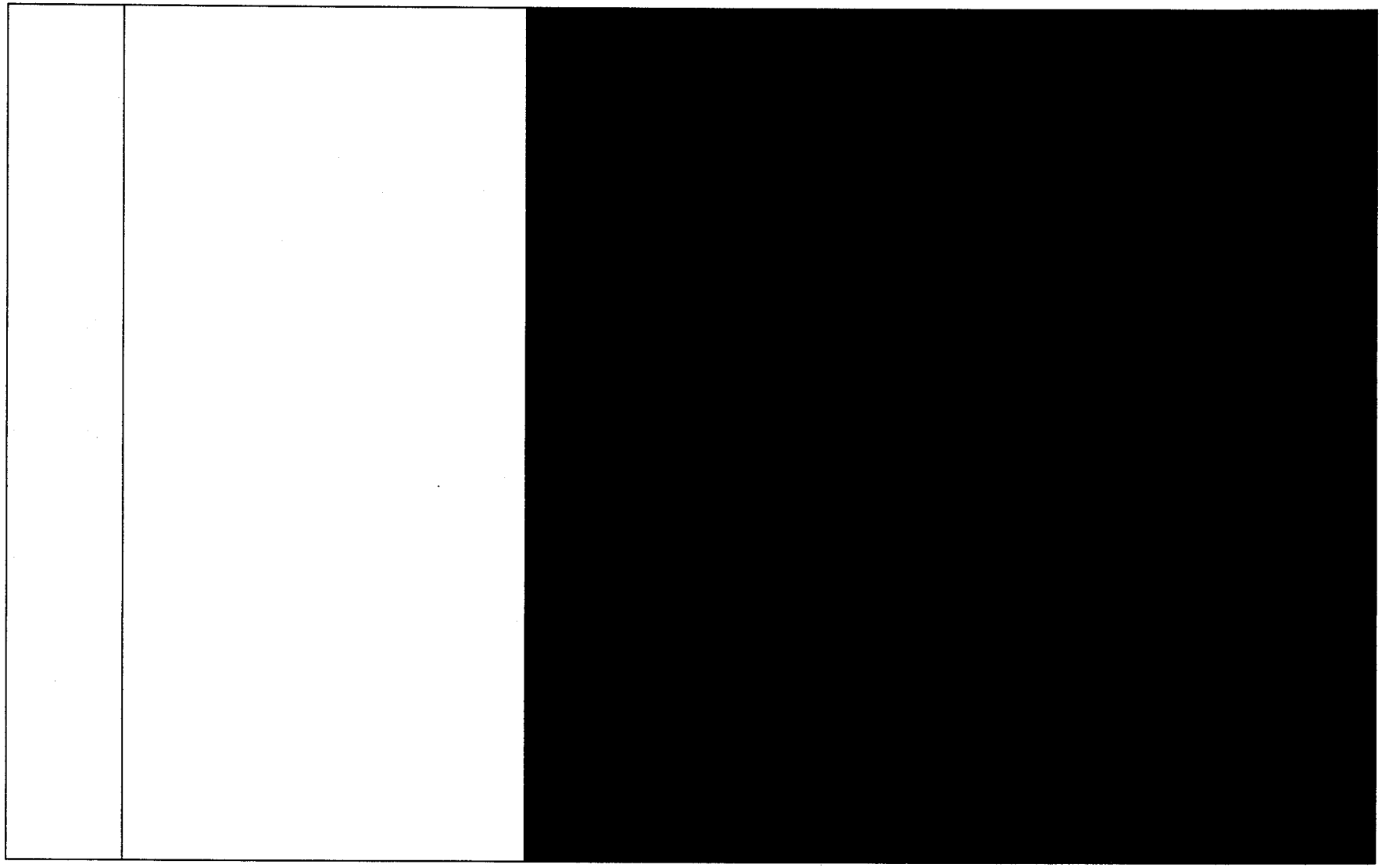

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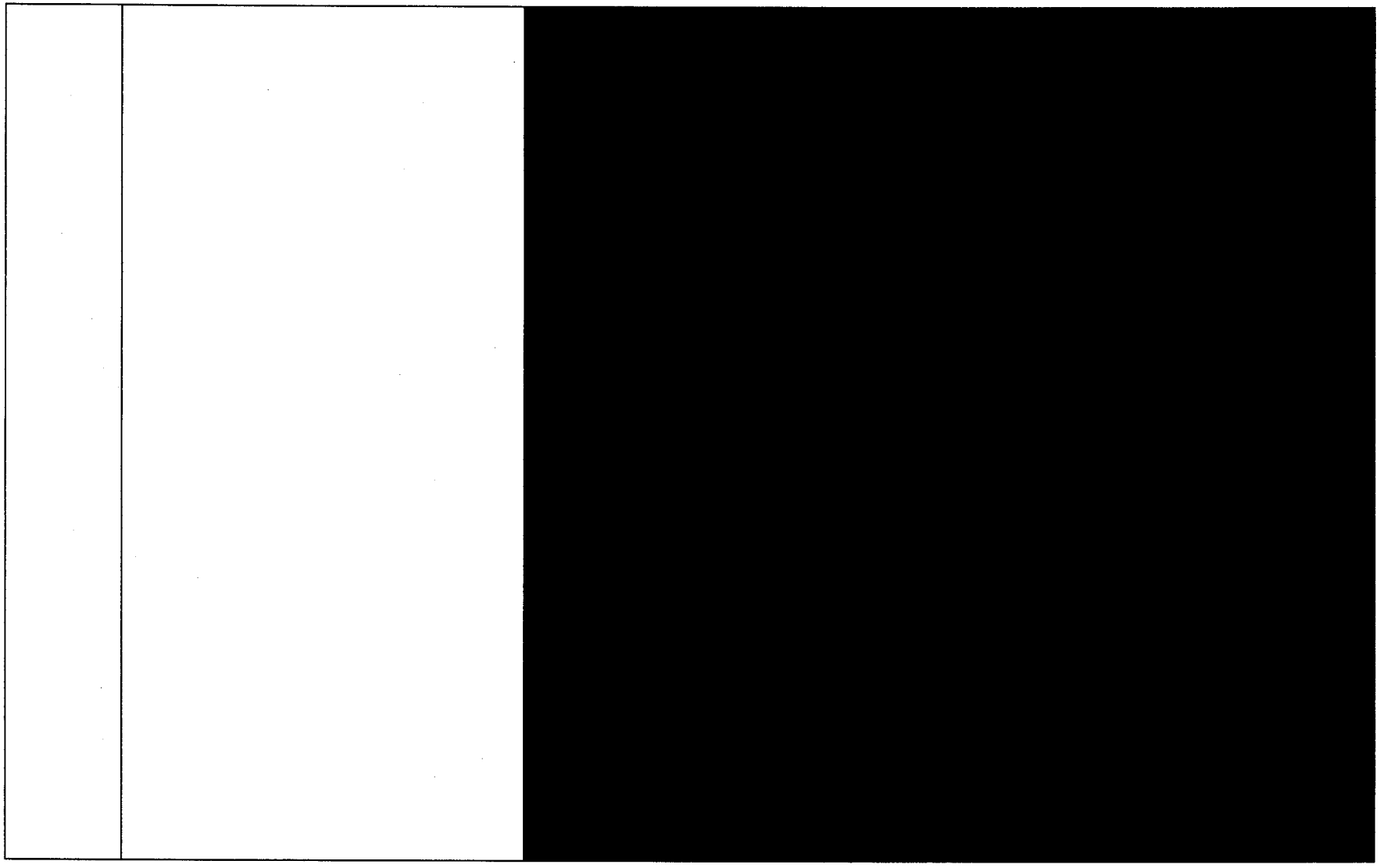

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		[redacted]
STS-9	Provide a system to track student and cohort level dropout data and calculate the dropout rate	
STS-10	Provide a system documents student reasons for early school leaving and associated demographic data	

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		[redacted]
STS-11	Provide a system that tracks College placement data (AccuPlacer at UDC)	
STS-12	Provide a system to generate reports on	

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	student mobility.	[redacted]
STS-13	Truancy rate by class, grade, school and by teacher	

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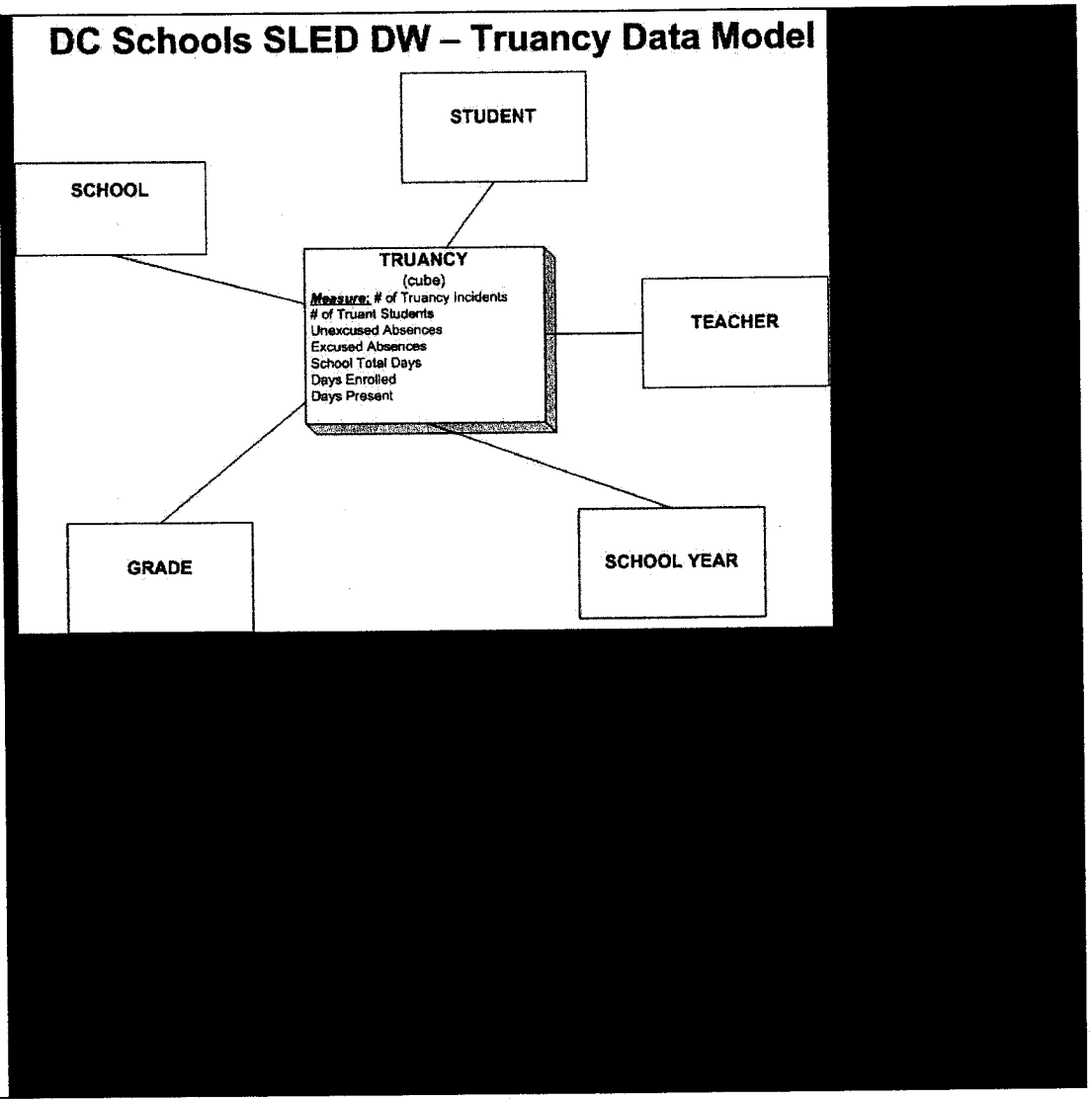
DC Schools SLED DW – Truancy Data Model
STUDENT
SCHOOL
TRUANCY
(cube)
Measure: # of Truancy Incidents
# of Truant Students
Unexcused Absences
Excused Absences
School Total Days
Days Enrolled
Days Present
TEACHER
GRADE
SCHOOL YEAR

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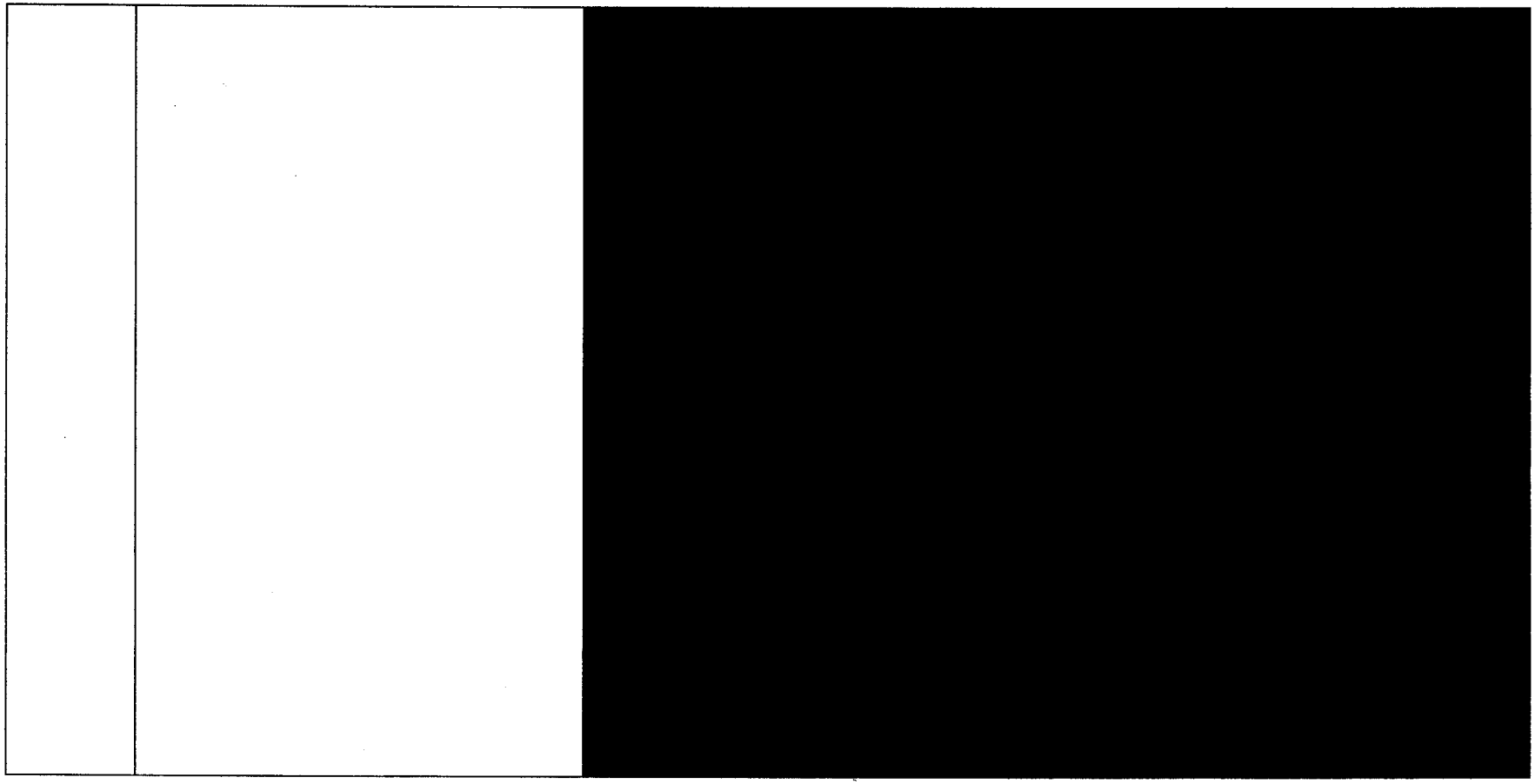

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Business Priority #4: Statewide Longitudinal Education Data Warehouse System

Narrative Response

The State Longitudinal Data Warehouse (SLED) will be the "flagship" of the SLED System. The longitudinal data warehouse shall serve as the integration point for all of the information in the SLED System.

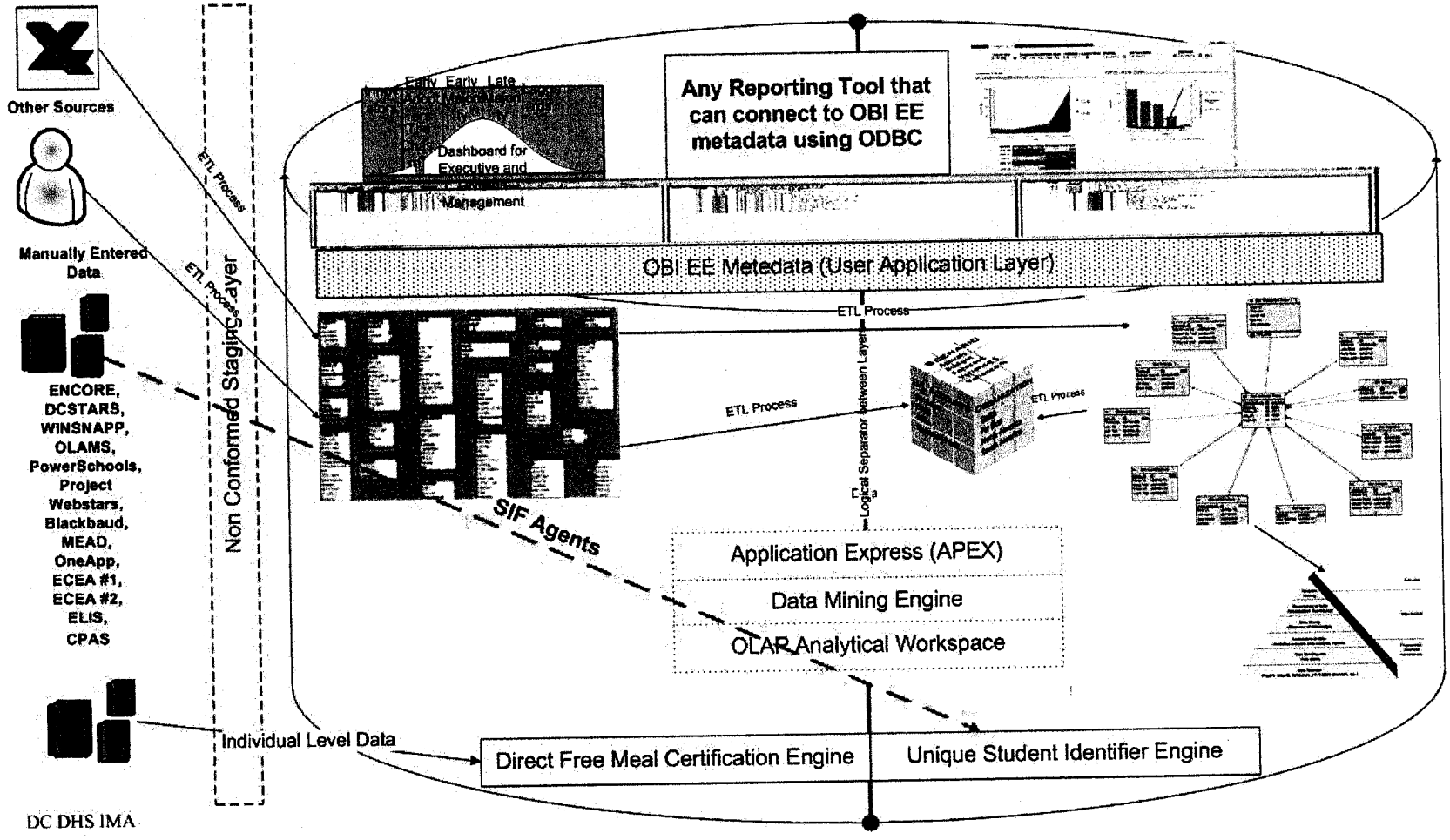
We will build the SLED using industry best practices in general and more specifically the Gartner Research note entitled: The "Star with Third-Normal-Form" Hybrid Is a Data Warehouse Best Practice as explained here. Data will be sourced from various source systems using Oracle's Extraction, Transformation and Loading (ETL) tool namely Oracle Warehouse Builder (OWB) Data will be extracted and transformed in keeping with the Business Rules that have been documented. The Data Quality Option of OWB will be used to cleanse and standardize data. This is a total solution that includes pre-defined models for the staging and delivery of data. Proven data models for a persistent staging are and dimensional data marts provide the cornerstone for a business intelligence solution that is open, extensible and ready to integrate third party data sources.

Additionally, the synergy between the Trillium Software System and Oracle Warehouse Builder framework ensures businesses have an end to end transformation process to integrate disparate data formats, to develop a consistent process of data quality management to secure an accurate and unified view of their customers. **Appendix 14– OWB and Trillium** has more details about the Trillium Software™ Data Quality Connector for Oracle Warehouse Builder.

Please see the next page for a high level architecture of the SLED.

High Level Architectural Diagram of SLED

STATEWIDE LONGITUDINAL EDUCATION DATA WAREHOUSE (SLED)



Oracle's Data Warehousing Fast Track Methodology (described in Appendix 16) will be used to implement this solution. We have provided a road map for at least the next 24 months. The proposed solution is based on an incremental approach. It does not seek to build all the subject areas in a "big bang" approach. Instead, the subject areas will be rolled out in five phases as described below (**assuming a start date for development as April 1, 2008**):

There are two architectural options for building the Subject Areas as under:

- **Physical Data Warehouse** – Create a separate physical Data Warehouse instance and move data from source systems to the Data Warehouse

- **Virtual Data Federation** allows the ability to access multiple data sources with a single query. It works like a virtual data warehouse: The data being queried remains in its place, rather than copied to a central repository, so companies don't have to keep duplicate versions in sync. Under the covers, software takes on tasks such as reconciling data formats, maintaining data integrity and building an aggregate view of information

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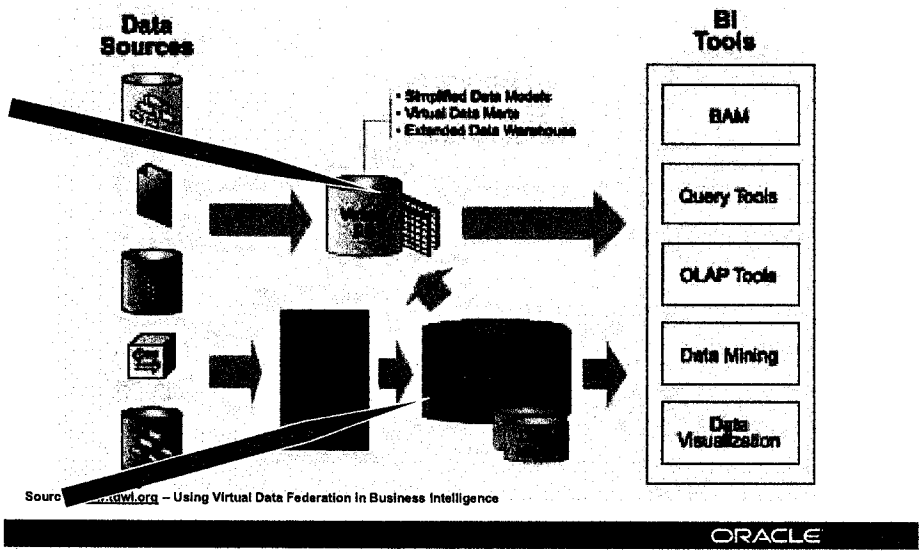
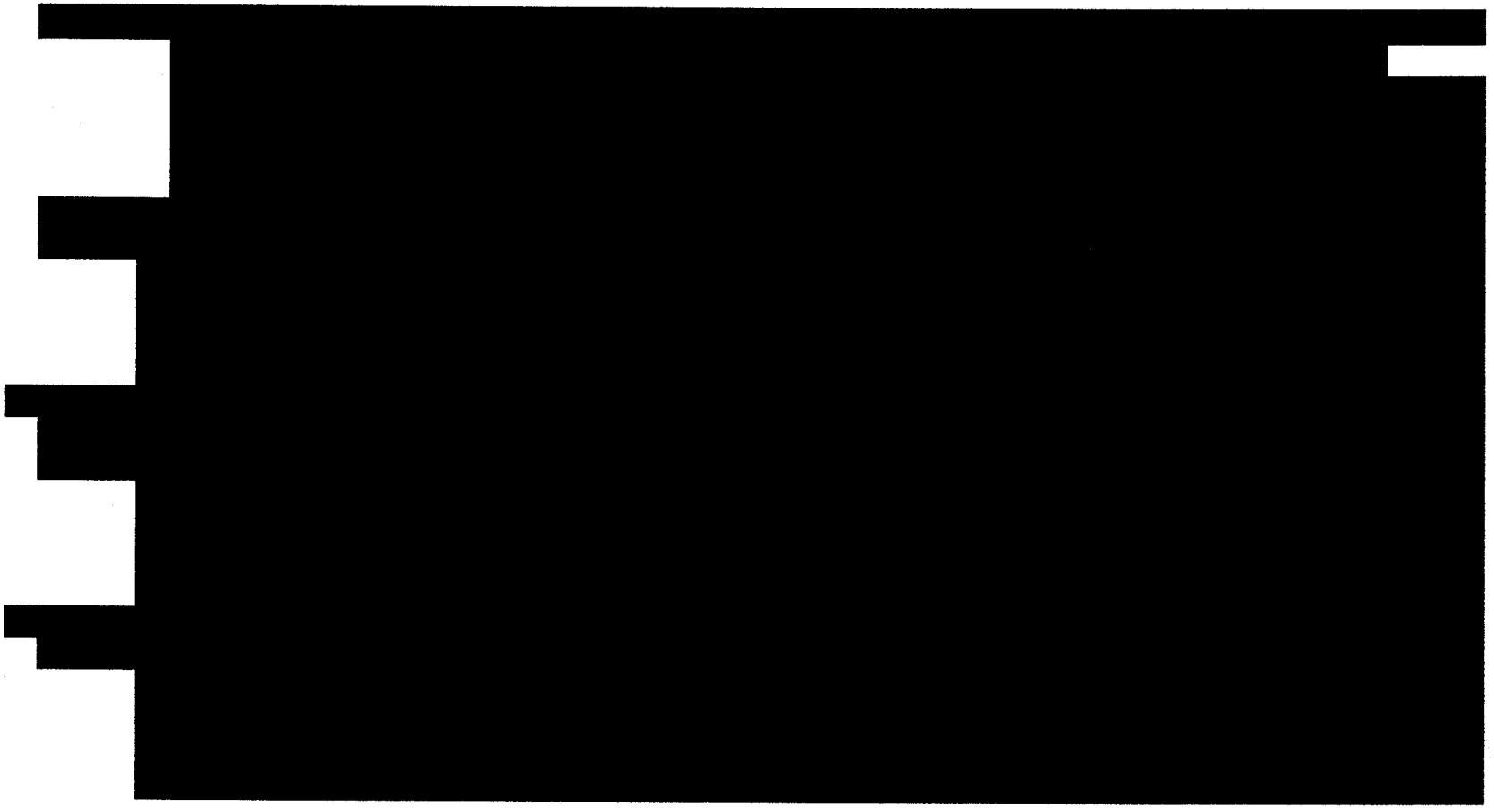
Architectural Options



Based on detailed analysis, Subject Areas could be created using one of the two architectural options.

Approximately



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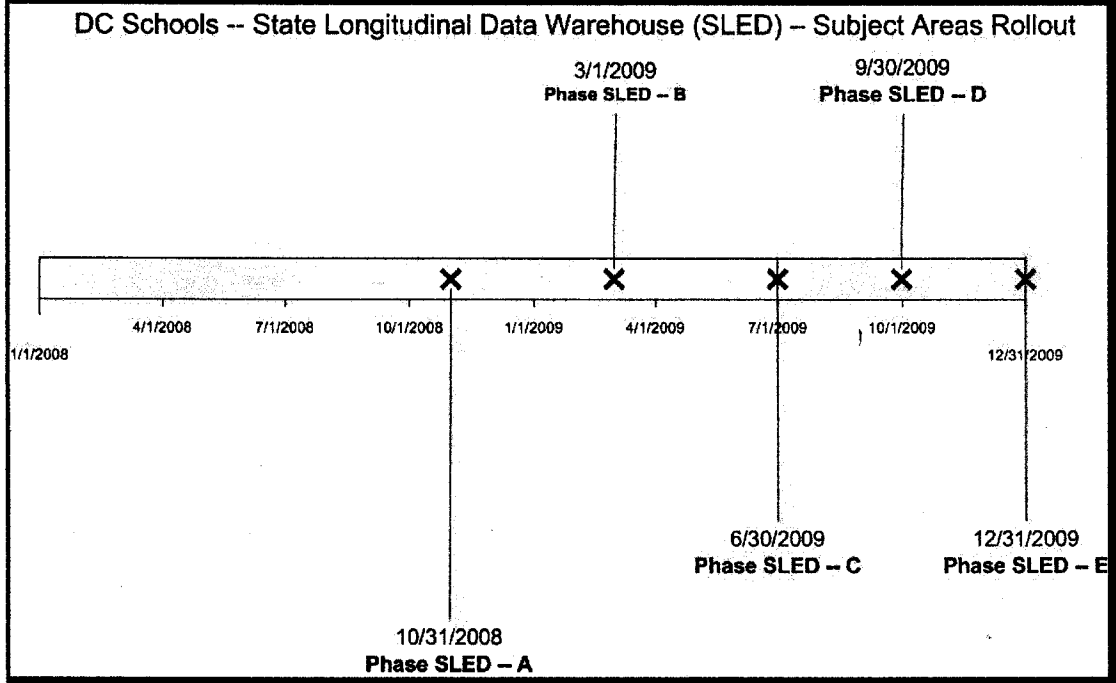
DC Schools -- State Longitudinal Data Warehouse (SLED) -- Subject Areas Rollout
3/1/2009
Phase SLED -- B
9/30/2009
Phase SLED -- D
1/1/2008
4/1/2008
7/1/2008
10/1/2008
1/1/2009
4/1/2009
7/1/2009
10/1/2009
12/31/2009
6/30/2009
Phase SLED -- C
12/31/2009
Phase SLED -- E
10/31/2008
Phase SLED -- A

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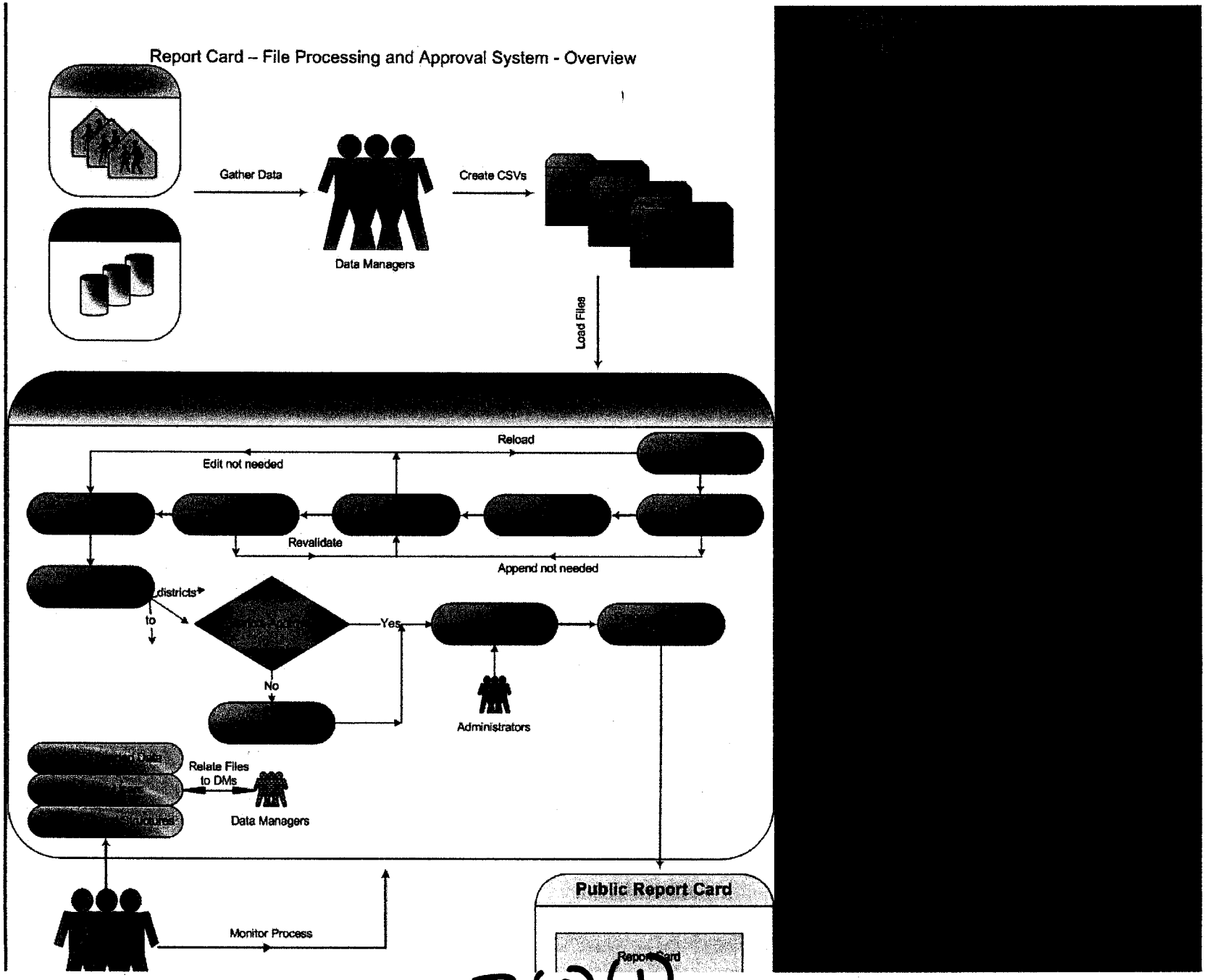
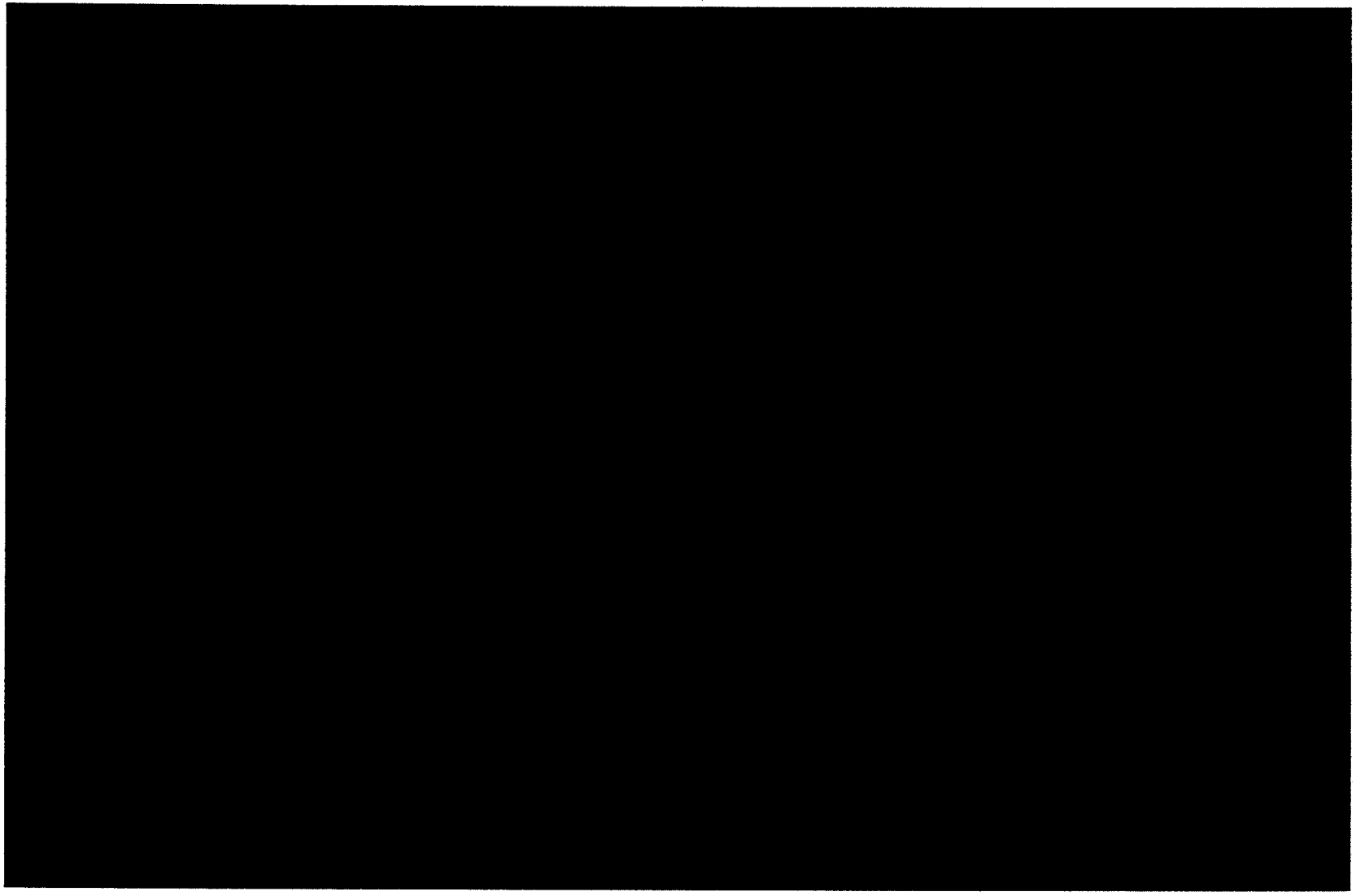
[redacted]


Report Card – File Processing and Approval System - Overview
Gather Data
Data Managers
Create CSVs
Load Files
Reload
Edit not needed
Revalidate
Append not needed
districts
to
Yes
No
Administrators
Relate Files to DMs
Data Managers
Monitor Process
Public Report Card



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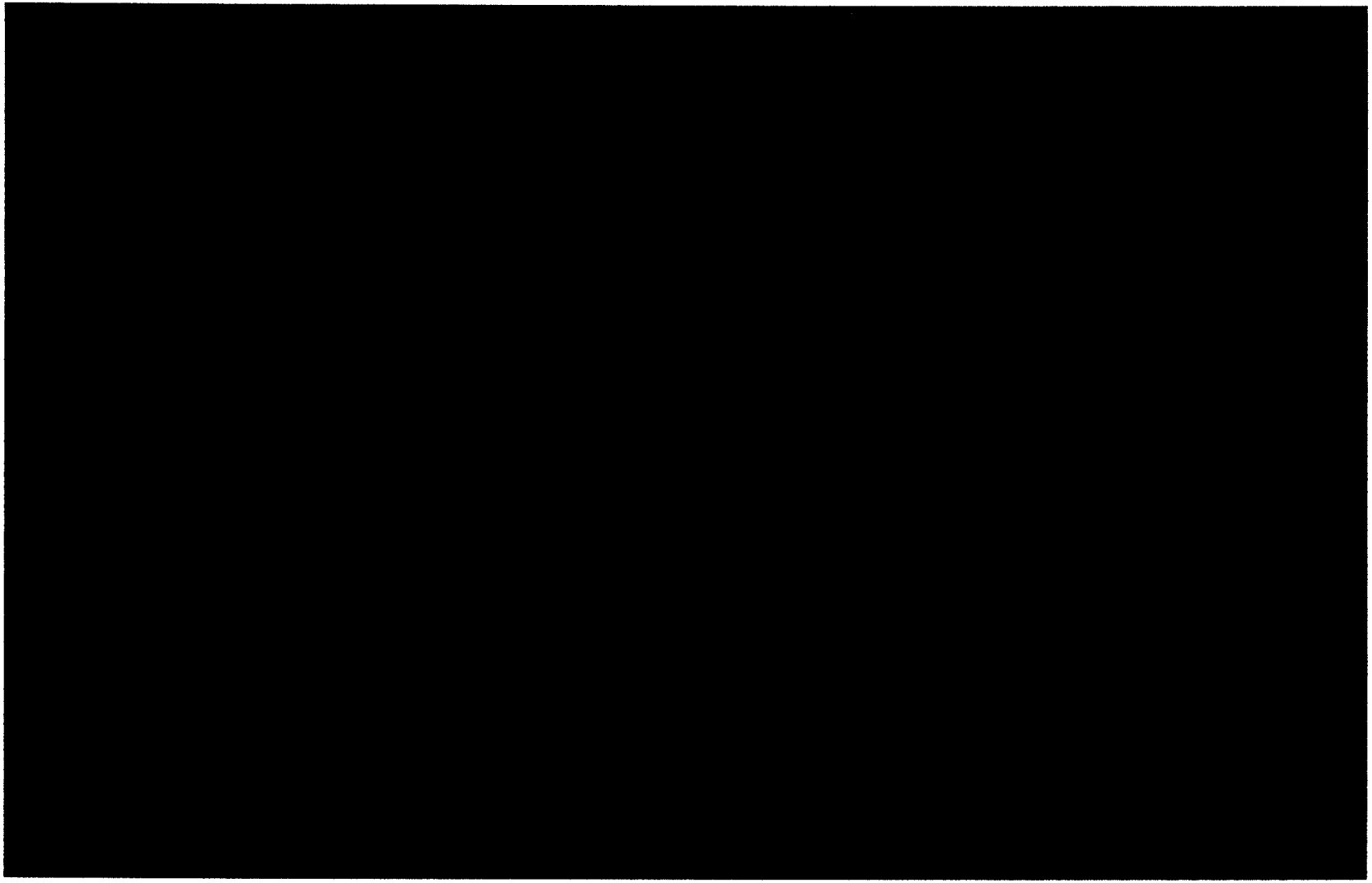

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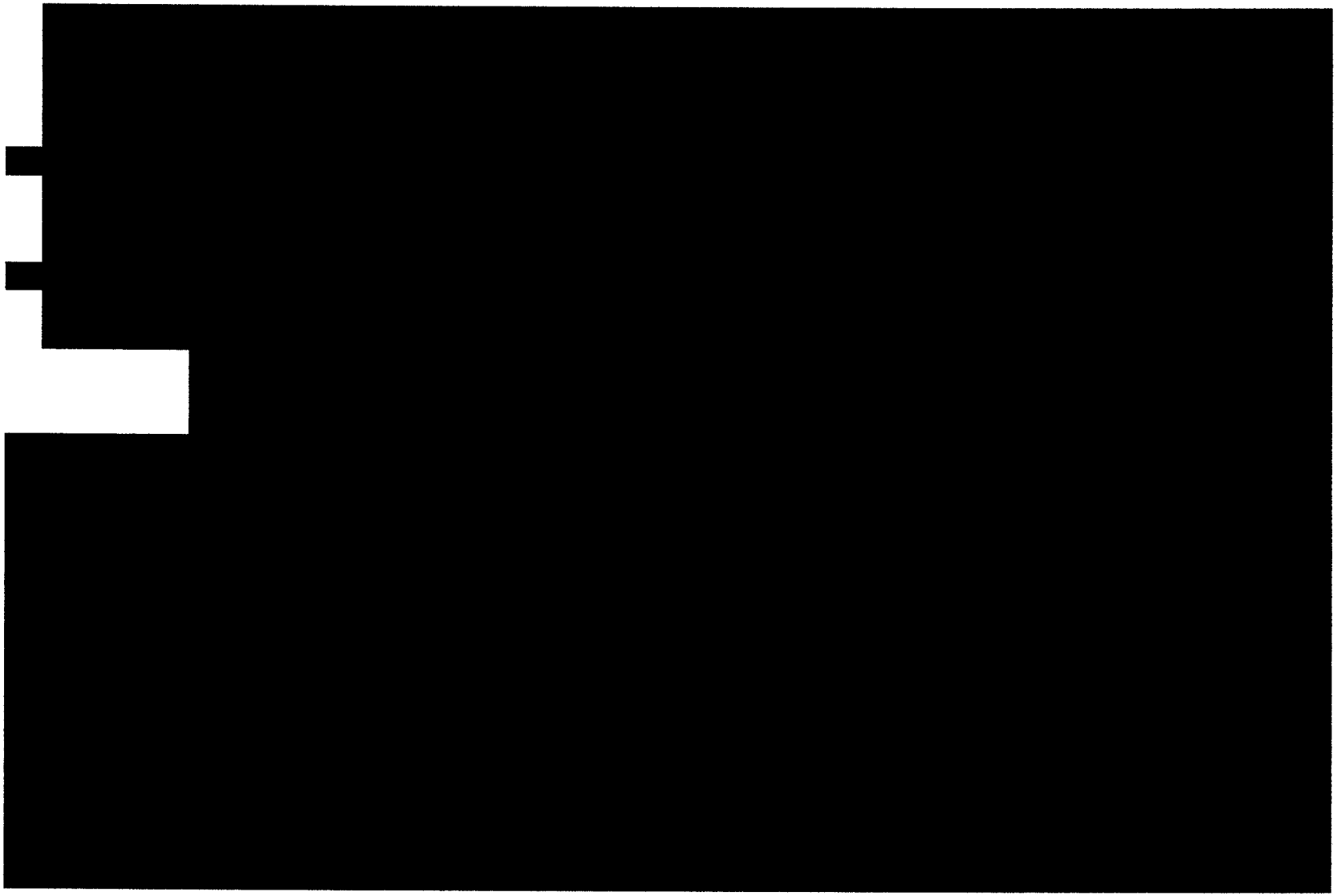

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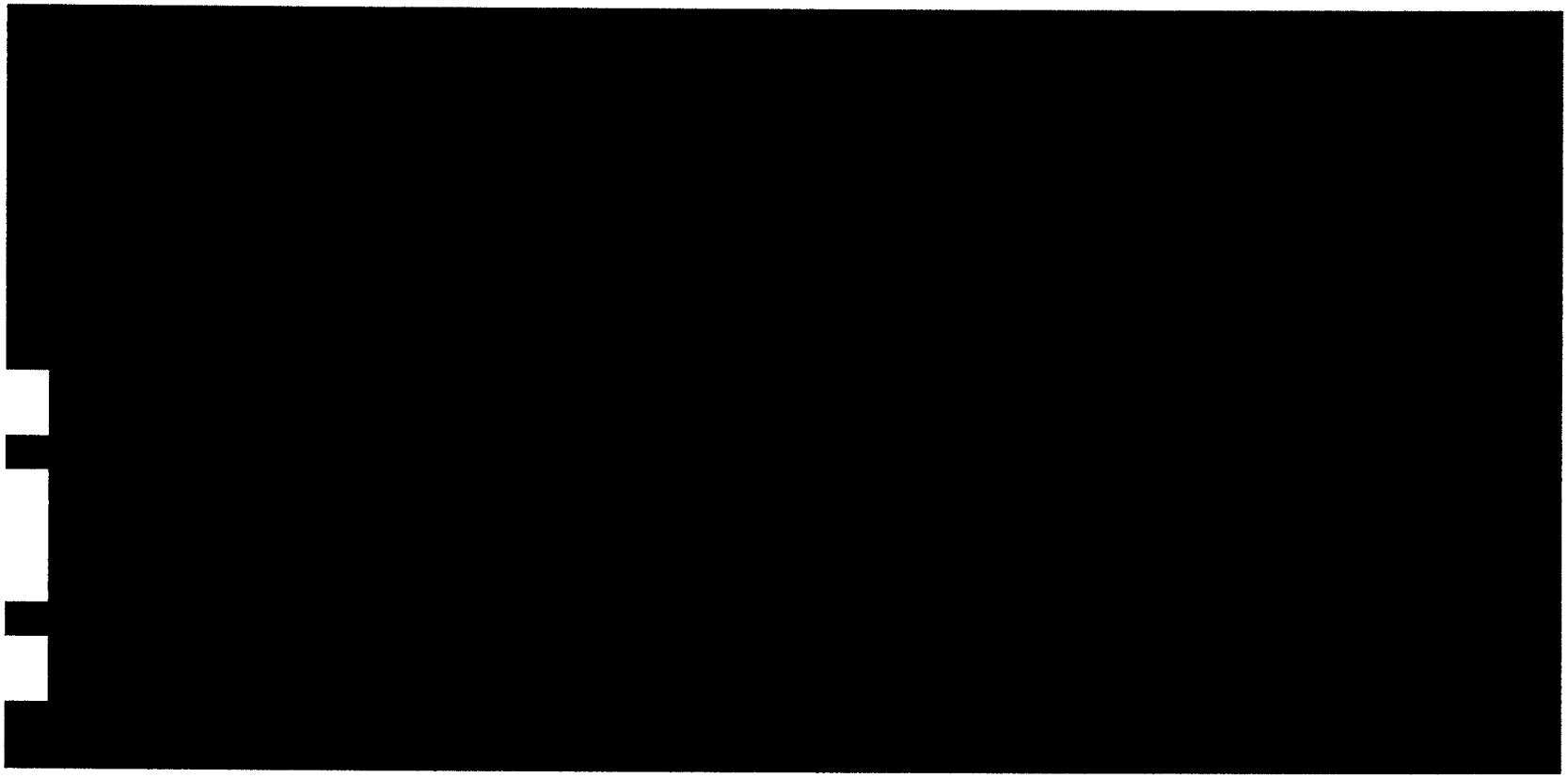

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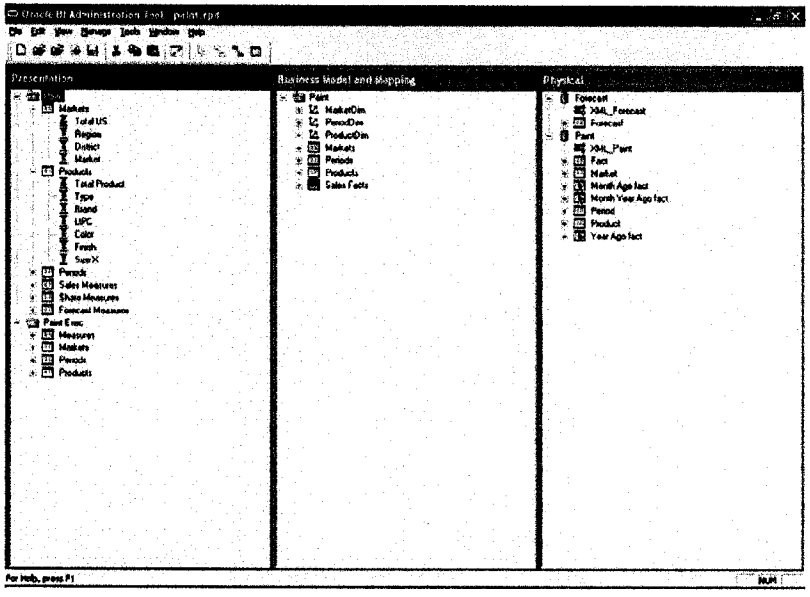

Quality Management

The proposed ETL tool, OWB offers a complete data profiling and correction solution. With data profiling, you can discover and measure defects in your data prior to and during the process of creating your data warehouse or BI application.

Once you profile your data, you can automatically derive business rules and correction mappings to clean data, derive quality indices such as Six Sigma, and use auditors to continuously monitor data quality. This functionality ensures your data quality efforts are sustained and continuous.

Warehouse Builder supports business rules directly in the product, allowing the rules to be used in data profiling (profile custom rules, but also detect and create rules), data integration and cleansing. Auditing can be done on business rules as well, where thresholds can be set. To read more:

http://www.oracle.com/technology/products/warehouse/pdf/OWB10gR2_ETLandBusinessRules.pdf

Process Management

Oracle Warehouse Builder (OWB) has rich features around the Process Management cross cutting component, specifically around Dependency Management and Scheduling.

- **Dependency Management:** Having designed the ETL mappings the user can graphically record the dependencies between the mapping runs. The user-friendly interface offers graphical access to the most common features that a dependency engine supports. The user can design the complete process including email notifications etc. Code generation for Process Flow definitions consists of industry standard XML Process Definition Language (XPDL). Out-of-the-box the process flows will be deployed to an Oracle Workflow engine. Process flow definitions can contain a multitude of activities, including mappings, transformations, external processes and file-based activities such as FTP or file exists.

- **Scheduling:** OWB allows you to create you own schedules and associate your executable objects with the schedules. You can associate an executable object (such as a mapping or a process flow) with a schedule. Upon deployment, Warehouse Builder deploys the schedule into the database scheduler. Schedules are defined by Start date and time, Schedule frequency, Repeat interval, Calendar expression, End date and time. Once the code is deployed in the target system the day-to-day activities include scheduling the ETL processes and verifying whether these processes completed successfully. All this processing takes place in the Warehouse Builder runtime environment. Oracle Enterprise Manager (OEM) provides the scheduling in an Oracle database environment. This is a DBA tool that Oracle bundles with the database or the Application server. Whether the user registers a job in OEM to run just a mapping or to run a whole process flow, the runtime platform will take care of the execution and auditing. Users can also run mappings or process flows from the deployment manager or via the command line. The command line option enables integration between Oracle Warehouse Builder and third-party schedulers.

Model Design

The proposed solution will use the our standard Oracle K-12 Data Models and includes Oracle Warehouse Builder (OWB) 10g Release 2, an industry leading Extraction Transformation and Loading (ETL) tool. It provides a rich K-12 Enterprise Data Warehouse solution. Our data models include the subject areas. These subject areas will contain start schemas relevant to SLEDS.

Oracle Warehouse Builder is not merely an ETL (Extract, Transform, Load) tool. It is a tool allowing users to design their ETL processes, target warehouses, intermediate storage areas and the end user access layer. Warehouse Builder enables designers to create various models for their target schema. Since Warehouse Builder is intended for the design of business intelligence systems, it has a wizard driven process to easily create both relational and dimensional models including star schemas. Once the metadata for the sources is captured and the target schema is designed, users can start to create the data flows that define how data moves from sources to targets. These data flows, ETL processes, are called mappings in Warehouse Builder. Warehouse Builder provides users with a graphical environment to model the ETL processes. The tool supports mapping multiple sources into multiple targets. It enables users to specify chained transformations on the data flow and apply complex PL/SQL transformations to the data.

Tabular Response

DW Req. #	Requirement	Proposed Solution
DW -1	Includes the tools to extract data from a wide range of source systems, transform it as needed for validity and compatibility, and load it into a common data repository.	[redacted]
DW-2	Includes an extraction, transform, and load (ETL) process to automatically transport the data from existing systems to the state.	
DW-3	Provides an ETL process and	

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	tool chain to include data quality analysis, cleansing, issue tracking and version control.	[redacted]
DW-4	Provides ETL process that is invisible to the front end users of the transactional systems.	
DW-5	Matches teachers to students	
DW-6	Tracks Excused/Unexcused absence/tardiness by class period and school day	
DW-7	Provides student schedules based on a statewide standardization of course titles.	
DW-8	Collects college credit through Advanced Placement or International Baccalaureate credit	
DW-9	Tracks rates of referrals, suspensions and expulsions by grade level and school, and by category or reason	
DW-10	Collects highest education level attained, employment status,	

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	employer, NAICS industry code	[redacted]
DW-11	Collects Student Grades	
DW-12	Tracks known chronic ailments and syndromes, immunization status, assistive devices and/or special accommodations required, primary physician(s)	
DW-13	Captures student intervention type, system, and frequency of delivery	
DW-14	Collects languages spoken other than English	
DW-15	Collects Type/hours (annualized) of extra-curricular programs enrolled in (examples: after school, summer, ROTC)	
DW-16	Links teachers to students in	

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	order to measure value added of a teacher's instruction.	[redacted]
DW-17	Stores and retrieves all National, State and Local High Stakes Test (HST) data: DC-CAS/BAS, PSAT, SAT, AP, IB.	
DW-18	Stores and retrieves ESL/ELL assessment data	
DW-19	Matches individual students' test records from year to year to measure academic growth. Also for classrooms, schools, grade levels, sub-groups, LEAs, and the state.	
DW-20	Collects information on untested students and the reasons they were not tested	
DW-21	Collects student-level college readiness test scores	
DW-22	Provides student-level transcript information, including information on courses completed and grades earned	

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DW-23	Provides location data (GIS coordinates) of Early Childcare Education (ECE) Program sites.	[redacted]
DW-24	Collects data and creates reports comparing ECE Programs by type of service, billing rates by service type, years in operation, funding source(s), program(s) supported, # of students	
DW-25	Collects data and creates reports comparing ECE service providers by type of service, billing rates by service type, years in operation, funding source(s), program(s) supported, # of students	
DW-26	Tracks Early Childhood Education Service Providers by location(s) of service, licensing/accreditation status, hours of service provided, service provider rating	
DW-27	Tracks a student's progress as he/she transition from early childhood to P -16	
DW-28	Provides results of Federal Youth Risk Behavior (YRBS) survey,	

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	local crime rates by type
DW-29	Relevant Case IDs from Child & Family Services, Youth Rehabilitation Services, Mental Health and Human Services data systems.
DW-30	Match student records between P - 12 and postsecondary education systems
DW-31	School Address, ward & GIS coordinates, ability to aggregate student demographics (see Student Tracking System) by class, grade level and school, as well as by teacher
DW-32	Collects and retrieves data on school buildings, including Year built, year last renovated, square footage of classroom, indoor recreation and outdoor recreation space, # closed class rooms, # open space classes, ADA compliance.

[redacted]

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Business Priority #5. Teacher Tracking System

Narrative Response

The DC Schools TTS will be integrated into the SLED system. This will consist of persistent data storage schemas for teacher information (TTS Staging Areas), the ETL code to extract, transform and load data from various source systems, the dimensional models required for reporting around teachers (TTS Dimensional Models) and the reports that provide this information.

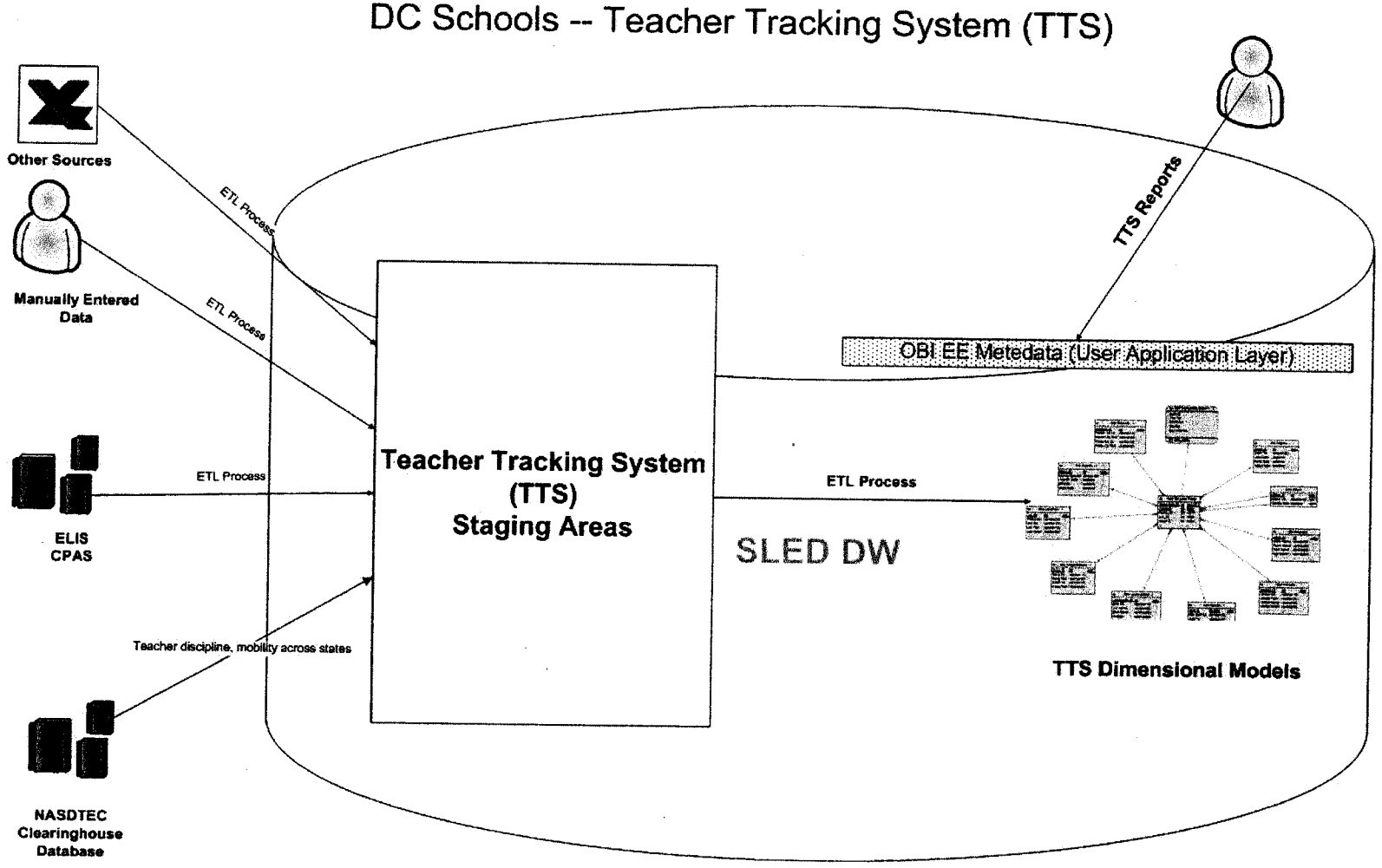
Some of the source systems from which data will be sourced include:

- Educator License Information System (ELIS)
- Candidate Performance Assessment System (CPAS)
- National Association of State Directors of Teacher Education and Certification (NASDTEC) Clearinghouse

State Longitudinal Data Warehouse (SLED) will be the "flagship" of the SLED System. The longitudinal data warehouse shall serve as the integration point for all of the information in the SLED System including TTS. Our ETL tool will integrate with Trillium in the process of determining Unique Teacher Identifiers. The significant fields that will be used to determine the determining Unique Teacher Identifier are Last Name, First Name, DOB, Address, Gender and SSN. This synergy between the Trillium Software System and our ETL tool ensures that businesses have an end-to-end transformation process to integrate disparate data formats, to develop a consistent process of data quality management to secure an accurate and unified view of their customers.

The TTS Staging areas will also consider the School reorganization announced on November 28, which introduced an aggressive academic plan calling for the implementation of innovative programs and enhanced staffing models in the District of Columbia Public Schools (DCPS). This proposed action strategy would impact students and families throughout the District by creating new neighborhood schools and improved feeder patterns. The introduction of new programs will align with DCPS's efforts to right size the school system ensuring that all resources are focused on supporting academic programs while eliminating excess space.

The high level solution is shown on the following page:


DC Schools -- Teacher Tracking System (TTS)
Other Sources
Manually Entered Data
ELIS CPAS
NASDTEC Clearinghouse Database
ETL Process
ETL Process
ETL Process
Teacher discipline, mobility across states
Teacher Tracking System (TTS) Staging Areas
TTS Reports
OBI EE Metedata (User Application Layer)
ETL Process
SLED DW
TTS Dimensional Models

	i.e., must not use the social security number).	[redacted]
TTS-3	Allows for individual and mass assignment of UTIs through batch processing.	
TTS-4	Assigns UTIs by a single process established and maintained by OSSE.	
TTS-5	Collects and manages educator data on the classes they teach, the locations where they teach, years of experience, certification/licenses, subject taught, their degrees earned, and when they leave their respective LEA.	
TTS-6	Tracks teachers across various disparate systems and analyze the mobility of instructional staff.	
TTS-7	Tracks Teaching schedule/ Programs	

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	Taught	[redacted]
TTS-8	Provides the ability to calculate the Highly Qualified Teachers (HQT) report for NCLB reporting.	

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TTS-9	Identifies highly qualified teachers and identifies the actions that must be taken for a teacher to meet highly qualified requirements if they do not.	[redacted]

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TTS-10	Provides identifiers for pre-slugging on the DC CAS Assessment.	[redacted]
TTS-11	The SLED System shall provide reports to allow users to analyze the experience levels of teachers by school and by LEA.	
TTS-12	Provides reports to allow users to analyze the qualifications of teachers by school and LEA	
TTS-13	Tracks assessment scores in the Praxis series of standardized tests	
TTS-14	Tracks and report on leave, retirement eligibility, system, school seniority, years teaching.	
TTS-15	Tracks and reports on schools attended, courses taken, grades attained, termination type for each position held,	

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	and special status (such as Master Teacher and/or Mentor Teacher)	[redacted]
TTS-16	Tracks and reports on participation in Teach for America, New Teacher Project, DC Teaching Fellows, etc	
TTS-17	Tracks and reports on teacher training institution; licenses and certifications including dates earned	
TTS-18	Possesses data cleansing capabilities (option to interface with Trillium as the cleansing tool) and recommends business practices to ensure that state level data has the maximum integrity practicable.	

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Project Management

Like any SLED data warehouse project of this magnitude the project management solution will be the key to its success. Our project management plan for this effort is one that is proven to be effective, reliable, and easy to implement and managed from start to finish.

More importantly, we have developed a plan based on sound best practices, lessons learned from other projects, industry tools, as well as SLED data warehouse guided principles and standards outlined in the DataQualityCampaign.org reference materials.

Our **Project Management Plan (PMP)** starts and ends with our talented, experience personnel team led [redacted]

This project will be managed by **Williams Adley and Oracle** [redacted] We will be leveraging a formalized methodology for project management. Our approach views project management success as achieving the expected solution quality while effectively controlling cost, scope and schedule. The methodology outlines various project phases, work products, task assignments and project management activities to occur within those phases.

PM Tool
We will utilize **Microsoft Project** as our management tool due to its use and adaptability.

Since this is a milestone-driven project, we will discuss our project management methodology with regards to deliverables and milestones. The various SLEDs deliverables are naturally the output of various work phases, tied with particular subject matter areas and functional requirements. The project management plan produced during the project's inception phase will tie to a set of phases, each of which is tied to a set of cross-referenced tasks and staff across our joint team to complete the tasks. At each phase of the SLED project, a review will be held to review timeline and funding. At regular intervals, issues are identified, catalogued and reviewed by the project team.

Through these processes, the dates of project milestones can be anticipated. Updates to the original project plan will be communicated from [redacted]

Part of dealing with a milestone-driven project is managing risks that could impact timely completion of milestones. The Williams Adley team will utilize a structured approach to

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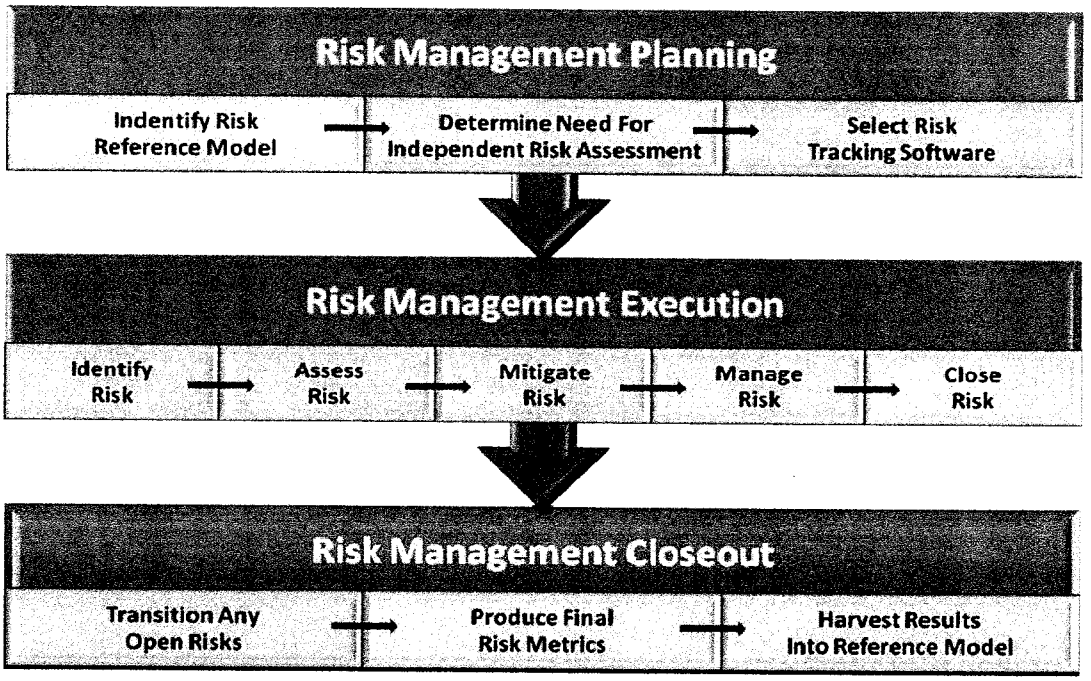
managing risk. The Williams Adley project manager will catalog dependencies and potential risks to project milestones, leading indicators of the identified risks, potential impact of the risks and a risk response plan identifying activities to avoid, mitigate, transfer or accept risks. In short, the methodology will provide a framework for evaluating which risks are the most likely to occur and which would have the most serious impacts on the milestone delivery dates.

SLED-RMP Management Organization

Process Responsibility

The Project Management Office (PMO) Risk and Issue Manager will be responsible for the Risk Management Plan, its effective implementation throughout the Project, trends and metric analysis, and training Project personnel on risk management. The Risk and Issue Manager (RIM) will also be responsible for selecting risk tracking software, for identifying whether the Program warrants an independent risk assessment, and for identifying any risk reference model to use as a basis for assessing Project risks or identifying candidate mitigation approaches.

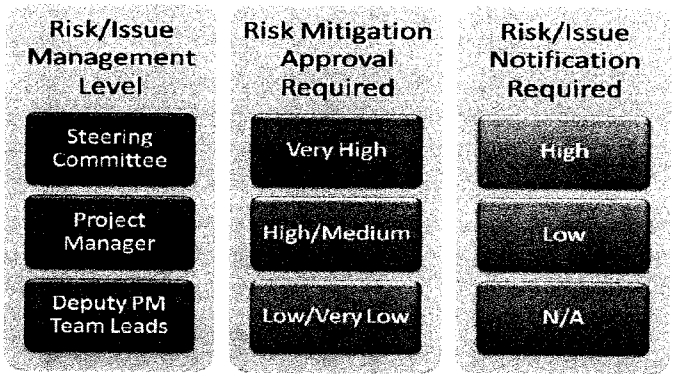
An overview of the SLED-RMP process is depicted in the figure below.



PMO RIM/RIM Team

The PMO RIM will have overall facilitative responsibility for the SLED-RMP process. The RIM Team will be comprised of the Risk and Issue Manager and the Risk and Issue Management Staff. Specific responsibilities may include, but not limited to the following activities.

- Develop the SLED-RMP.
- Select Risk Tracking tool.
- Identify Risk Reference Model if applicable for the application class.
- Assist in determining need for independent risk assessment, support sourcing if required.
- Maintain the SLED-RMP in line with configuration management procedures.
- Plan and coordinate RIM meetings.
- Plan and manage RIM training.
- Generate risk reports, including trends and metric analysis, for risk meetings and ad-hoc requests.
- Clarify, consolidate and document risks.
- Maintain and monitor data in the risk-tracking tool.
- Establish initial priority, owner, and target due date.
- Monitor the status of risk mitigation.
- Communicate status to risk originators and risk owners.
- Escalate communication if expected mitigation action deadlines are not met.
- Execute the risk closure process.
- Work with the Risk and Issue Management team to facilitate risk mitigation.
- Maintain direct communications with:
  - *Risk Originator-* The Risk Originator is any person in the Project who identifies a Project risk.
  - *Risk Owner-* The Risk Owner is the person to whom the RIM will assign primary responsibility for mitigating the risk. The assignment is based on the type of risk and will be assigned to the team member who is empowered to assure this risk is mitigated. This will typically be a team lead and/or their respective co-lead. Program sponsors, directors and/or managers may also need to be aligned with a risk to assure adequate support. The Risk Owner may have, but not limited to the following responsibilities:
    - Assess the risk and create a risk mitigation plan that meets RIM team approval.
    - Update risk information in risk database as described below.
    - Mitigate risk per the risk mitigation plan.
    - Recommend risk closure to RIM team.
    - Present risk status at RIM team meetings as required



The Project Management Office (PMO)

The PMO will have the authority to approve the risk mitigation proposed by the Risk Owner. This authority varies by the severity of the risk, as noted in the figure to the

right. Additionally, the PMO members will be notified of risk mitigation, as noted in figure to the above. It is anticipated that the majority of risk mitigation will take place at the project team level.
The PMO will have specific responsibilities for:

- Accountable for ensuring timely mitigation of risks and escalating risks to the Steering Committee for support as needed.
- Champion mitigation implementation.
- Review status, severity, ownership, and completeness of risks.
- Determine risks to be returned to the appropriate project teams.
- Establish severity of risks and define target dates.
- Establish ownership of risk and confirm target dates.
- Identify risks for escalation to the Steering Committee.
- Work with project teams, subject matter experts, and the Risk and Issue Manager to facilitate solutions to risks.

Decision Support

Narrative Response

Oracle Business Intelligence Enterprise Edition (OBIEE) is a comprehensive and integrated suite of Analytic Tools designed to bring greater business visibility and insight to a broad audience of users. The Oracle BI Suite consists of several products that can be used either together or independently.

- **Oracle BI Server** – a scalable, efficient query and analysis server that integrates data from multiple relational, unstructured, OLAP and pre-packaged application sources, Oracle or non-Oracle.
- **Oracle BI Answers** – a powerful ad-hoc query and analysis tool that works against a logical view of information from multiple data sources.
- **Oracle BI Interactive Dashboards** - interactive dashboards that display personalized information
- **Oracle BI Publisher** – a scalable reporting engine that to generate reports in multiple data formats and delivery channels
- **Oracle BI Briefing Books** – reports that capture a snapshot of an Oracle Dashboard for offline viewing
- **Oracle BI Disconnected Analytics** – a package that allows Answers and Dashboards to users disconnected from the network
- **Oracle BI Office Plug-in** – synchronizes information from Answers, Dashboards and Reports to Microsoft Word, Excel and PowerPoint
- **Oracle BI Delivers** – an alerting engine to deliver notifications on pre-defined business events to multiple channels

Tabular Response

DW Req. #	Requirement	Proposed Solution
DS -1	Provide a system is user friendly, easy to understand reporting tools to serve up a common set of pre-built reports. This front end could also include simple report creation capabilities.	[redacted]
DS-2	Provide a system that possesses ad hoc decision support tools that allow users to manipulate variables in the SLED System to conduct in depth analysis (i.e. A cube). This information shall be presented in user-friendly formats.	

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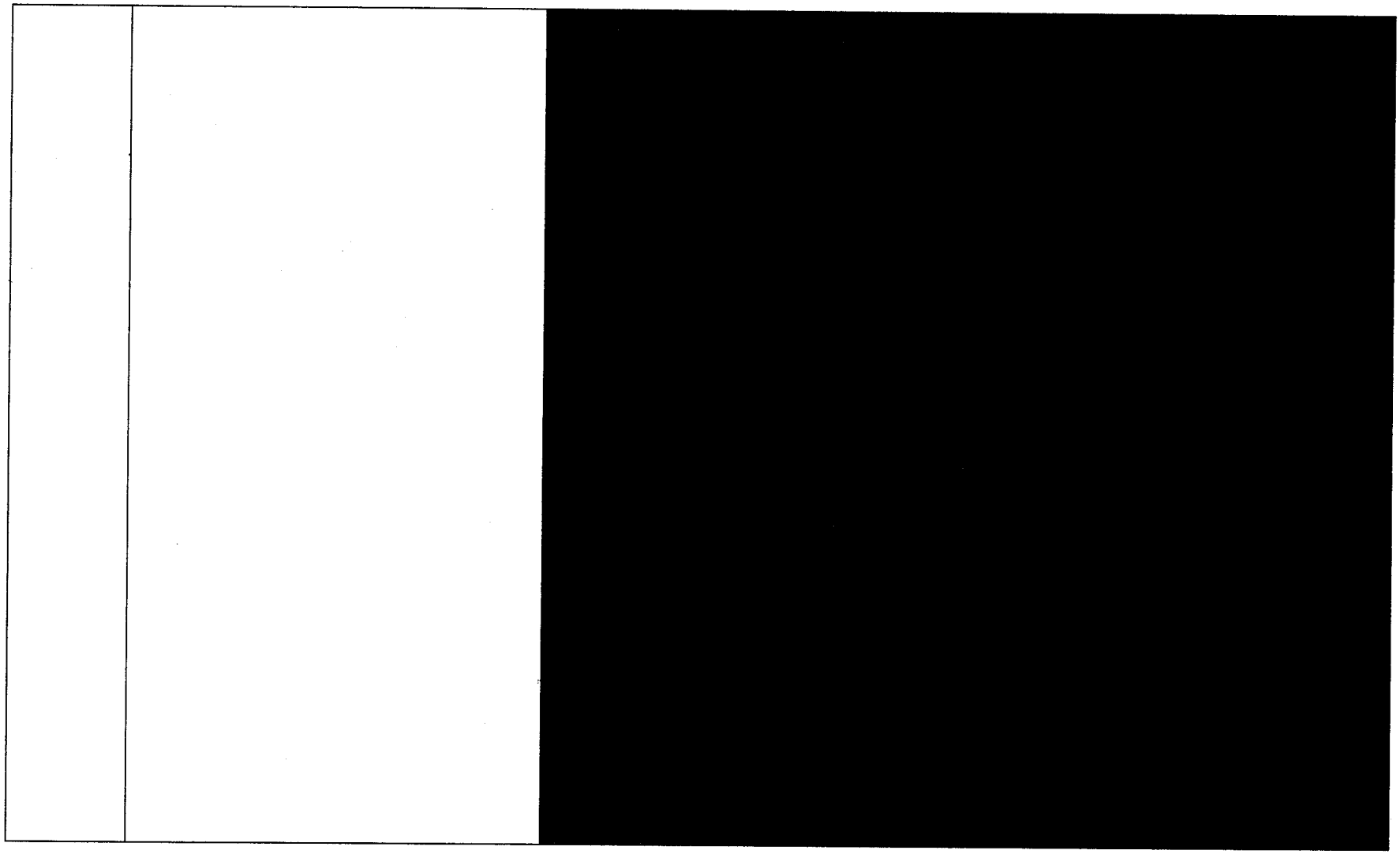

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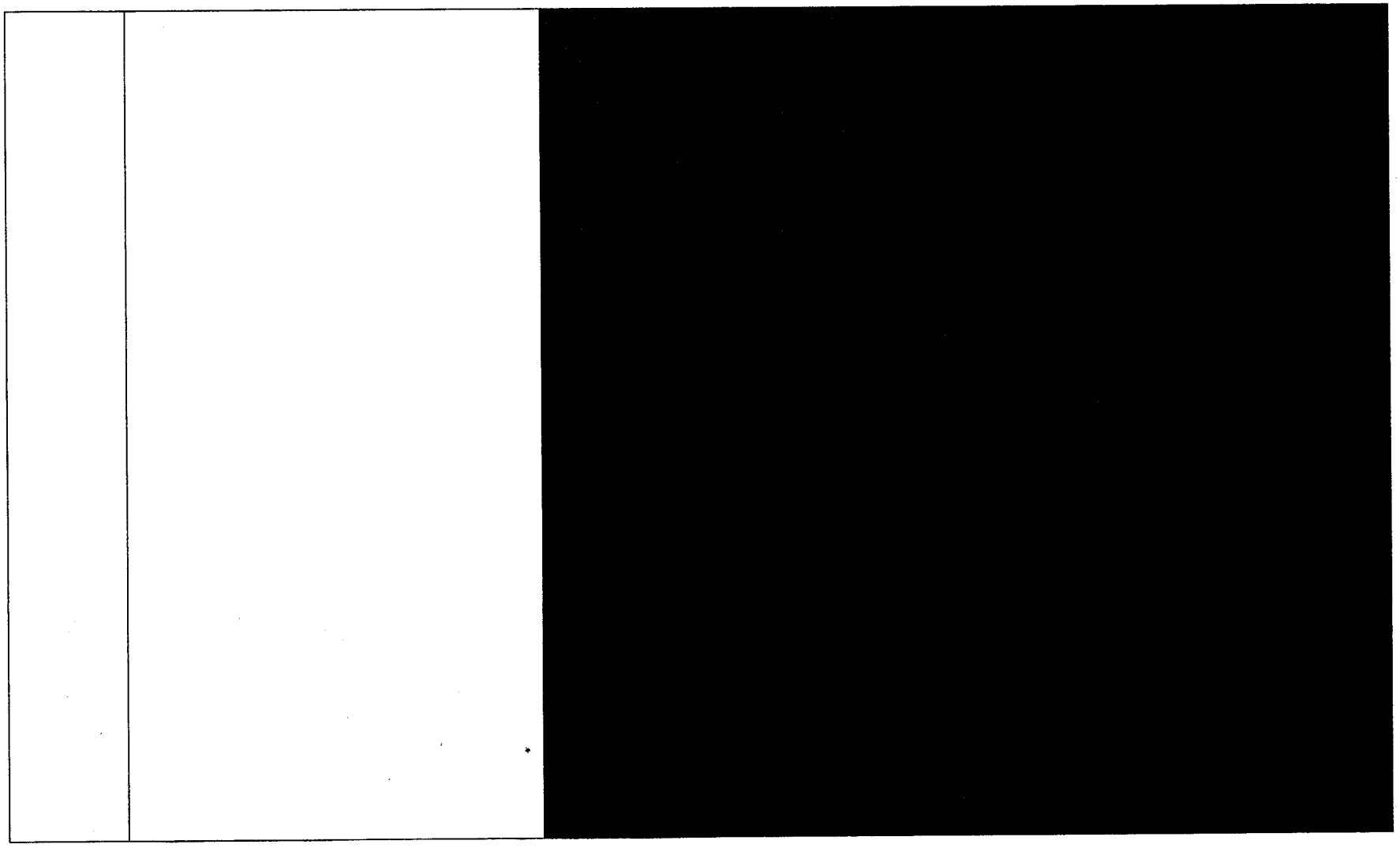

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		[redacted]
DS-3	Provide a system that creates graphical representations of data in a wide variety of styles and graphical formats	

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		[redacted]
DS-4	Provide a module that allows users to output data, tables, graphs, and reports in a variety of formats including graphs, charts, spreadsheet, and Adobe PDF.	
DS-5	Ability to do cohort analysis, longitudinal analysis, regression, correlation, value added assessment. Conducting this more sophisticated analysis will require the storage and processing capacity to manage extensive amounts of data.	

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		[redacted]
DS-6	Provide a system that includes all Internet components that are available 24x7, 52 weeks per year	

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		[redacted]
DS-7	Provide access to the SLED System using nonproprietary, browser-based, and operating system independent interfaces.	
DS-8	Not require users to have additional tools or software unless the Contractor provides free access to those tolls for download by users	
DS-9	Provide a system that is kept up-to date, remains backward-compatible, as new browser versions are released (Offerors shall specify the browsers supported and minimum certified versions)	

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		[redacted]
DS-10	All Intranet components must be available from the Internet via Virtual Private Network.	
DS-11	Provide a system that is design - consistent with standards among all user screens	
DS-12	Provide a system that includes an option to accommodate DC Government "Branding" onto screens, web pages, reports, and documents to include logos, banners and other representative items.	

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